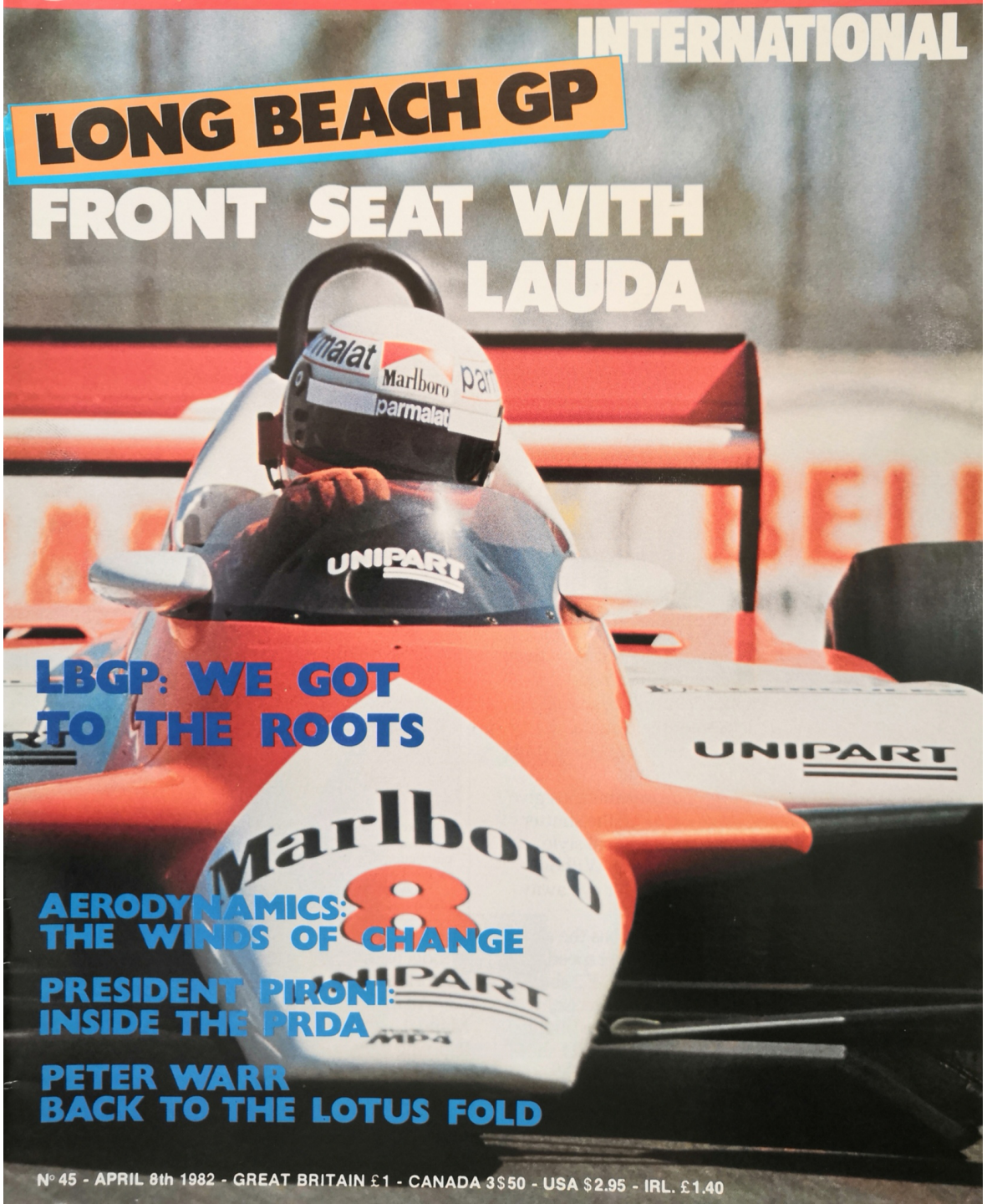
Grand·Prix INTERNATIONAL

LONG BEACH GP

FRONT SEAT WITH LAUDA



LBGP: WE GOT TO THE ROOTS

AERODYNAMICS: THE WINDS OF CHANGE

PRESIDENT PIRONI: INSIDE THE PRDA

PETER WARR BACK TO THE LOTUS FOLD

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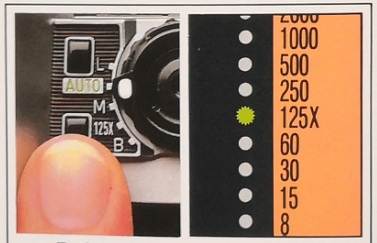

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Grand Prix international

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The paddock in Long Beach

OFFICER MANSELL

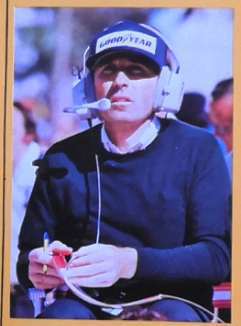
Having a spot of bother with the Los Angeles Police Department turned out to be a lucky break for Lotus driver Nigel Mansell during last year's GP, when he was stopped for some over-enthusiastic driving on his way home from the circuit.

After sorting out their differences Mansell became quite friendly with the policeman who invited Nigel to take a closer look at police work firsthand. He was taken to the local firing range where he let loose with a variety of guns, then he went on patrol in an L.A.P.D. cruiser and participated in the arrest of a transvestite! He finished his "tour of duty" sharing the controls of a police Bell helicopter around downtown Los Angeles. *"It was a fantastic experience, better than 20 episodes of a police show on TV. This was for real,"* said Nigel.

"PAPA" TAMBAY

Our congratulations to Patrick Tambay and his charming wife Dana who gave birth to a baby girl recently. They have named her Esti after Jochen Mass'wife, who received a telegram saying, "Mother and baby fine. Father exhausted."

However, we are pleased to report that when we saw Patrick spectating at the Phoenix-Indy car race a week prior to the LBGP, he looked to be fully recovered from the ordeal.



FRANK'S DILEMMA

The shock news before the Long Beach GP was, of course, the surprise anouncement by Carlos Reutemann, quitting F1 and the Williams team, saying that his heart was no longer in his job.

Not surprisingly, Frank Williams became the most popular man in the paddock as several drivers sought him out to push their names forward for one of the most competitive seats in F1 at this time. But Frank was making no rushed decisions. *"Obviously I am going to have to make a decision pretty soon, but it will not be until next week when I have had a chance to review all of my options,"* says Frank.

Mario Andretti, who stood in for Reutemann at Long Beach, was only making a "one-off" appearance because he has committed himself to a full Indy car CART Championship program, while Frank's young protege, Jonathan Palmer, is also committed to an F2 seat for 1982.

PRESIDENT BALESTRE SPEAKS (AGAIN)

Summoned to hear what was promised to be "very important" news, a large number of international and American journalists attended a Friday afternoon press conference at Long Beach, the second of the weekend to be given by FISA's dogged President Jean-Marie Balestre.

One hour after he had started to speak, M. Balestre appeared to have lost the attention of the local pressmen. Much of his speech had been occupied by such items as a review of the exact nuance of a statement which M. le President had made some weeks ago in Sweden, while he also informed the gathering that he has recently been given the full support of the major American racing organizations, and has been invited to join France's Olympic Committee.

Recent FISA decisions which may interest readers of these columns include the following:

- The Spanish GP has been reinstated in the world championship. It is scheduled for Jarama June 27 but may never take place because of financial problems.
- An early decision has been promised on the Renault/Ferrari protest against the procedure adopted in Rio for weighing the two leading cars. In theory, at least, this will settle the question of disposable ballast (water for "brake cooling").
- The establishment of a "Fourth World Championship" to be disputed by single-seater racing cars fitted with production-based engines.

The FISA President repeated his promise to "save Formula 1" with his technical proposals to the FIA at its Casablanca conference later this month. In the meanwhile, he is also determined to ban six-wheel cars and qualifying tyres for 1983. In answer to a question from **GPI,** Balestre also indicated that he would get changes made to the F1 regulations *"even if it involves going outside the framework of the Concorde Agreement."*

One of the FISA delegates whose club officially supports Balestre has told us that the President looks set for a long term of office, despite his current dispute with the French press and three major French and Italian teams. *"Politically, he is very well organized,"* we were told.

FIND THE PHOTO

We at GPI can only hope our readers got more fun for their money with the unintentional quiz we posed them in the Brazil issue, trying to match the captions with the picture on several pages.

Our sincere apologies for the many errors that appeared, a result of the many problems of trying to edit a magazine from 6,000 miles away over a telephone at 4 a.m. Please bear with us as we iron out the problems of our new printing schedules. We plan to get it right in the near future - or offer a prize to the reader who spots the most mistakes.

JVH

RENAULT CHIEF LOOKS AROUND

An important visitor to Long Beach this year was Monsieur Max Mangenot. As President of Renault Sport and Secretary of the Renault Executive Committee, M. Mangenot occupies vital positions in the hierarchy of the nationalized French motor manufacturer.

Needless to say, the Renault boss has been taking a keen interest in the recent political maneouvering in the world of motor sport. He told **GPI** over the lunch table in the Renault compound that the Regie's view is that, while a balance in engine power between turbo and non-turbo teams is an important sporting objective, he would regard any premature attempt to reduce the power of turbocharged engines as damaging to the very considerable investment which Renault has made in turbocharged racing engine technology.

M. Mangenot also repeated Renault's promise eventually to make its turbocharged V6 engine available to other F1 entrants. *"Unfortunately, due to the present crisis, it is impossible for us to make any serious plans to organize such sales,"* he said.

Asked about the price of such engines when they reach the market, he said that they would not be much greater than the rival Cosworth, which sells for just over £25,000 (about $50,000).

CELEBRITIES IN CELICAS

Olympic gold medal winning athlete Bruce Jenner ran out the winner of the 10-lap Celebrity race held on Saturday. Driving identically prepared new-model Toyota Celica coupes, a mixed field of "pros" and "showbiz" people put on a good show of fender-bending for the record 85,000 crowd.

Heavy metal rock star Ted Nugent held the lead until passed by Jenner, a former winner, who took the flag five seconds ahead of American "great" Dan Gurney.

GEOFF'S REPEAT PERFORMANCE

Attracting probably the best-ever field for such an event in North America, the Formula Atlantic race which supported the Long Beach GP provided a second consequtive victory for Geoff Barbham, son of three times world champion Sir Jack Brabham.

Geoff, the current Can-Am champion, only made his decision to race a week earlier, *"mainly to get some racing miles under my belt,"* he said. He added lustre to a field which already included

three times Indy winner Al Unser's son, 19 year-old Al jr., and 18-year-old Mike Andretti, son of former world champion Mario.

Young Andretti was an early casualty with gearbox trouble on his Tiga, but Brabham and Unser were both caught up in an exciting battle involving Lotus F1 recruit Roberto Moreno and the very talented black driver Willy T. Ribbs, a one-time star of Formula Ford racing in Britain.

Ribbs, who took pole position despite an almost total lack of racing in the past two years, led for 10 laps until forced to hand the lead to Moreno while lapping backmarkers. Moreno tapped the wall a couple of times and had to give best to Brabham, who drove superbly to reel off the laps and take a fine victory. For the Australian, it was revenge for the defeat handed to him in his own country's GP last November by Moreno, who finished a good second at Long Beach with his borrowed Ralt. Unser, in only his ninth ever race on a road circuit, took a promising third. The unfortunate Ribbs was a casualty of engine trouble. All the leading drivers were behind the wheel of Ralt cars, made in England by former Brabham owner/designer Ron Tauranac.

SWISS INVALIDS RECOVER

There's good news about Swiss F1 drivers Clay Regazzoni and Marc Surer, both of whom have spent long periods in hospital recently.

"Regga," having made a partial recovery from the spinal injuries which he suffered when his Ensign crashed at Long Beach during the 1980 GP, is expected to be recovering this week from a second operation to restore full mobility to his legs. He will be in Washington for the operation, again under the supervision of the brilliant Taiwanese surgeon Doctor Kao.

Meanwhile in Zurich, Arrows F1 driver Marc Surer is making plans for his racing return now that he has had the metal pins removed from the ankle which he injured in a training crach at Kyalami in January. His first competitive outing is expected to be with one of the new Ford C100 Group C prototypes which have been entered for the Monza 1000 kms endurance race on April 18.

The very best wishes of **GPI** and its readers go to Clay and Marc for a complete recovery.

ANOTHER ONE FOR KEN

Ken Tyrrell might be well advised to wear a beard and dark glasses when he goes to IMola in a couple of weeks time following his second successful protest against the Ferrari team in two races.

Again highlighting the imprecision in the wording of the technical regulations, the Ferrari team caused a stir in the pit lane on Saturday when their cars appeared with two offset rear wings, mounted from a central post, that covered virtually the entire width of the rear end of the car.

Although the decision was extremely tough on Villeneuve who was excluded from the results several hours after the race, it was a commendable one by the Stewards of the Meeting. By interpreting the rules as they should have been written in the first place and now undoubtedly will be, they have prevented 30 cars arriving at the next race with similar wing arrangements that could so easily have led to the kind of terrible accidents that occured when high wings were first introduced into Formula 1 in the late '60s.

Had the same prompt action been when hydropneumatic suspensin and water cooled brakes first appeared, many of the political arguments and ill-feeling which plague the sport today might have been avoided, not to mention the considerable sums of money which these lines of development have wasted.

While Ferrari will, no doubt, lodge a counter appear against the decision, just as Colin Chapman did with the Lotus 88 last year, they should, like every teeam, have considered the possible consequences of 'their' interpretation of the rules as just another one of the risks of Grand Prix motor racing and accept the consequences.

After all, as one team manager pointed out, "it's probably a good thing for them anyway, for when everubody else turned up with similar wings at Imola they would have suffered even more then."

JEFF HUTCHINSON

THE KING RETURNS TO HIS THRONE

There was no doubt at Long Beach about the man who dominated the race. Niki Lauda the technician applied to this race all the know-how that had already given him two world titles in 1975 and 1977... and he had a game plan for victory in California.

By Heinz Pruller

My feeling? Just as if you are incredibly happy about something, enjoying it tremendously, and you have to tell the whole world!" That's how superman Niki Lauda described his unforgettable last lap at Long Beach. But why didn't he raise his arm when he got the chequered flag, like all the GP winners used to do?

"Because the track was so bloody bumpy that the car was jumping around like a goat... and because I didn't want to shunt it into the wall like an idiot just a few yards from home in front of millions of TV spectators."

As you can see, Super-Niki is back, in style, with a super-win, with super-quotes. *"I always said it would take me three races to get back fully into shape. Long Beach was the third race. So everything's right on schedule. Just the way my aeroplanes used to take off."*

As it happens, in the week before Long Beach Niki had leased his two Fokker aircraft to an Egyptian company. The deal's for one year, starting on April 1. It's very serious, not at all like the April Fool headline in a French newspaper which announced "BMW turbo engine for Ligier-Talbot." As Niki says, *"now Lauda-Air can continue to exist on a healthy basis. The worry of it has been taken off my shoulders, so now I can concentrate on racing. It's worth two tenths of a second per lap..."*

He didn't need that sort of an edge at Long Beach. The gap he'd pulled out on Keke Rosberg, at its widest, was 45.43 seconds on lap 44. The winning margin was 14.66 seconds.

Niki analysed the decisive phases of his great comeback win in his usual clinical style.

First, the start. "Super Rat" had worked out two different tactics. The first was to try to out-manœuvre pole-man Andrea de Cesaris, the youngest guy in F1 racing

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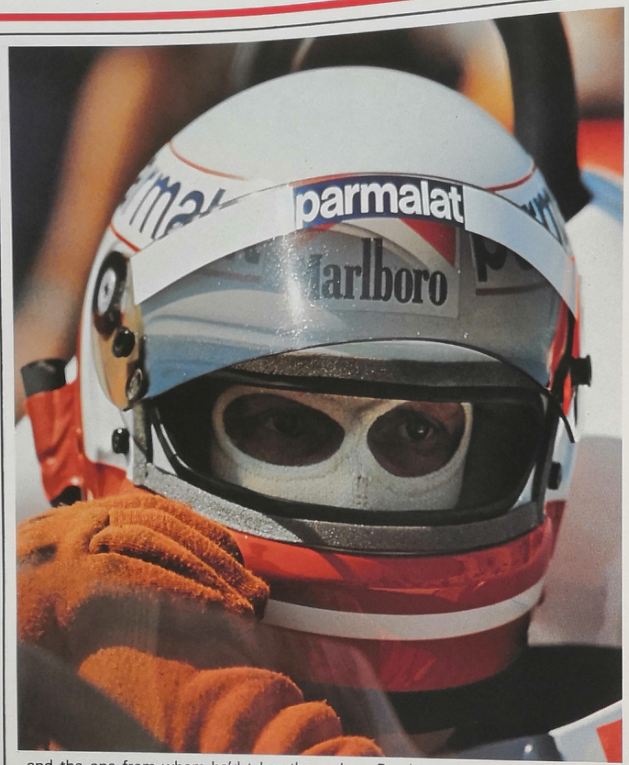


and the one from whom he'd taken the McLaren seat, not by making him nervous in the warm-up lap, just by making a better getaway. *"He need 9000 ou 9500 rpm to do it right, but I have to wind my Cosworth up to 10,000. I already practised it twice."* And if the McLaren didn't get to the first corner first? *"In that case I'll have to be patient and not try to overdo things. Above all, there's no question of taking chances with de Cesaris."* It was tactic number 2 which he had to adopt. *"Not that I didn't do a good start. But both de Cesaris and Arnoux used their power advantage, so I was third."*

Second important fact: the Giacomelli-Arnoux collision on lap 6 which put Niki into second place behind Andrea. *"I could see that Rene had missed a gear and couldn't accelerate. I also noticed that Giacomelli got a bit nervous, because he was zig-zagging behind the Renault. So I moved to the right, hoping that Giacomelli would try to overtake Arnoux... and thank God, he did. Bruno missed his braking by about 50 mètres and hit Arnoux really hard up the back."*

How many other current drivers would have sized up a situation like that before it even occurred?

The third factor was the overtaking of de Cesaris. It was to be the manœuvre that put Lauda into the lead of a Grand Prix for the first time since his famous "vacuum cleaner" success with the Brabham-Alfa fan car at Anderstorp in the 1978 Swedish GP. (Monza 1979, his last GP win before Long Beach, was the result of one minute penalties imposed on Andretti and Villeneuve for jumping the start.) Said Niki, *"I could afford to wait for the Alfa because my car was faster."* So what exactly happened on lap 16? *"De Cesaris ran into the dirt and cold not accelerate properly... he was behind a backmarker (Raul Boesel's March). No problem for me to out-accelerate him and to arrive first at the next corner."*

From then on, in spite of a challenge from a distant Keke Rosberg, it was Niki all the way. Which brings us to point four: the "phantom duel." Keke had come up after a great chase from eighth place on the grid, and after the de Cesaris accident the signal on Niki's pit signalling board read "Rosberg P2." That might sound natural, but it wasn't necessarily so. Because at Kyalami Lauda was not aware that he was only seconds behind Arnoux, in fact he thought that the Renault was a full lap ahead.

At Long Beach it was quite clear to the McLaren pit crew that Niki drove very much a tactical race, something that Rosberg had to find out, not knowing whether he was in trouble with his tyres, possibly because they were picking up dirt or the rubber worn off other people's tyres. *"If it was going to happen, it was going to happen after two-thirds distance,"* Rosberg had said. *"The only way to find out was to get my foot down. So I attacked..."*

Niki's answer was to pull out a full two seconds in just one lap, from 19.8 to 21.9 seconds. Keke got the message. *"I controlled him,"* said Niki, for whom the ideal controlling situation has always been *"10 seconds' lead over the second place man with 10 laps to go."* At Long Beach, he had even more. *"My car was absolutely perfect, beautiful, and the tyres were no problem at all."* Niki had chosen Michelin's harder 606 compound, while Watson had 405. Although his understeer problem was later traced to worn skirts, John had to stop for fresh tyres. Niki wasn't worried: *"I didn't even know that John had stopped."* Instead, he was listening carefully for any unexpected noises from the engine of his MP4. *"But there was nothing strange ..."* Finally, fifth, was the problem of the track and the accidents all around it. *"It was because the surface broke up all around the new section ... one inch off line and you would run off the road."* Lauda stayed on the narrow "groove" for two solid hours of racing, while all around him the wrecks piled up. Jackie Stewart had done exactly the same at Zolder in '73. It was the race in which Niki was to earn his very first championship points, two for fifth place with BRM ...

And this victory, number 18, how does it compare with the 17 which went before? *"Usually, the last win is the best. But this one is especially sweet for me ... because after two years it was not easy for me. Even I had had some doubts, though not very often."*

So much for the joy of winning. What about the thrill of being back in a good racing car? *"I tell you, now I enjoy racing even more than before, because at the age of 33 I know why I'm doing it. At 18 I didn't know."* His special satisfaction is still technical, *"to work with the engineers to make a good car go quicker, the instant success. If you have an idea and make your car go faster by two tenths of a second, that's the reward you get immediately. In the airline business, you can work day and night ... then the interest rate goes up and there's no pay-off at all."*

When Niki came to Long Beach he had promised himself, *"this time I will be braking later than in Rio, just as late as the really late brakers."* When practice started, he was indeed the latest of the late, wreathing the McLaren's team's experimental carbon fibre discs in smoke after only six laps or so. He jumped into the T-car ... and promptly put it into the wall, head-on in second gear. There was no oil on the track, the tyres were warm, no excuses. *"I accelerated too early coming out of the corner,"* he grinned, *"and the car went sideways."* By then he had discovered one valuable thing: *"the Michelin qualifying tyre is slower than the 606 race rubber."* It was a lesson which the Renault drivers and Laffite, plus the Alfa boys, had yet to get sussed out. Saturday's practice show was fantastic. A few laps and then he bided his time in the pits. Only when Arnoux had set a "pole" time did Niki return to the track, now 5th. The impact was like a bomb: 1 m 28.16s, then an incredible 1 m 27.44s. *"How much do you pay for pole position?"* he asked McLaren's Ron Dennis. *"Nothing"* was the reply. *"So who gets the money?"* he said. *"Me,"* said Dennis, pointing to himself.

The world's press was gath eving in the MacLaren pits: Lauda on pole, what an achievement, and the TV crews got ready to shoot. Niki, smiling, grabbed an apple .... and then the loudspeaker produced the shattering announcement that de Cesaris had stolen pole position by 0.12s. Niki's mouth was open for an instant. *"I don't think I could have driven any faster,"* he said.

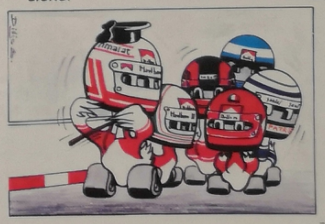
For Jean Sage and Alain Prost in the Renault camp, and for any others, Niki was the race favourite. They were not wrong, either, as events in the race were to prove. On his way to the airport, no more than half an hour after the race was over, when we walked out together from the Long Beach arena, Niki was all smiles. He embraced his long-time mechanic Ermano Cuoghi, now with Alfa Romeo: hardly back, and already he was the number one of Formula 1. Who had paid him the nicest compliment? *"Don't know. They were all very friendly and happy for me. Rosberg and Villeneuve on the podium ... there was no jealousy."*

Jacques Laffite, who doubted that Niki would ever made a successful comeback, had said some generous things. *"It's fantastic that Niki won. Niki has proved to the youth of the world that you can get whatever you want in the world, provided you're prepared to work for it."*

Nevertheless, even McLaren International must have had their doubts about Niki, even after signing him. His contract with the team, a secret document which he signed on November 12, enabled McLaren to withdraw after the fourth race, which was to have been Long Beach.

"You wouldn't believe how much resistance I had to fight to get Niki into the team. I can't tell you now, maybe later," says Dennis. The secret contract is water under the bridge now. McLaren has already offered Niki a contract for '83: they did it at Kyalami, even before the race. Asked about the championship, Lauda declined to reply: *"Ask me later in the year, at Las Vegas perhaps. For once, though, one thing is for sure. The next race, Imola, will be much more difficult without a turbo engine."*

How long before McLaren gets a turbo, then? *"Because of our team performance, many engines are available. There's the Porsche turbo, the BMW turbo, maybe even a Honda turbo. Ron Dennis is the man who makes the decisions."* □



PIRONI AND DRIVER POWER

Whatever else was on his mind in South Africa, it was not driver power: that is not Pironi's style. He is your very image of the modern racing driver, with attache case weighing as much as the driving helmet. But in Kyalami, driver power made itself felt in no uncertain fashion — or are we really talking about drivers' lib. And if so, what are drivers going to burn? Their money?

As Didier said in Long Beach, he thinks of himself as 'reserved'. Had he found the hours of negotiating with the entrenched forces of FOCA and FISA, not to speak of the South African organisers, difficult? Nope, "I was quite sevene. If I hadn't thought our cause was absolutely legitimate, and if I hadn't thought that what we were asking for was simply a correction of a flagrant injustice, I might have felt differently.

But in fact, it was no real strain. The important thing is that all the drivers were united. They had been united from the start, and all I was doing was expressing their collective opinion."

The strike, you may remember, was over the new superlicence which is required of all drivers. The technicalities need not interest us; suffice it to say that the manner of its imposition was, as is usual with the FISA, lacking in consultation and explanation. In fact, by the time the tropps gathered for South Africa, most of them hadn't even read it. It looked like another piece of administrative bumpf and they just signed it. That was where Pironi's task began: to explain to the unlettered the nature of fine print. "We met for a half hour at Kyalami, and within a half hour they had all realised the document they had signed was totally inacceptable. There was no difficulty in reaching unanimity: FISA and FOCA had achieved that for us. But as it wasn't handled with calm or in any normal fashion, we all knew we had to fight it with the weapons we had at hand." Enter Pironi. Didier had been at the F1 meeting where the new licence was first mooted and had headed straight for the lawyers and the insurance experts. "I suppose I was elected as the driver's representative because I have some technical proficiency and because I have the sort of infrastructure to cope with problems of this sort."

Which is a statement too modest by half. In fact, there are three sides to Pironi: the driver, the 'calm and serene' negotiator and the thinker about commercial

interests. Perhaps it is not coincidence that the ineffable Mark McCormack represents Pironi and would not find it amiss to handle not just other drivers but, given the right incentive, the drivers as a body. Was or is Pironi the thin edge of wedge, and will the Pope - also handled by McCormack -- be the first Polish driver in F1?

"There is no doubt", said Didier, "that we would like to expand the PRDA into an organisation that could consider commercial propositions. But that is in the future. For the time being we are concerned with establishing ourselves as a professional body, as most sports have such professional bodies, and with making sure that we are — to cite but one difficulty — properly insured. I got to the insurer and I say, am I fully insured whatever happens to us? and he says, oh sure. Then I say, well why don't you give me a piece of paper that says I'm insured no matter what. And he says, er, ah, maybe I'd better look at that waiver again. It think that most of us sign our rights away. That is the sort of thing we will be looking into."

As for the Battle of Kyalami itself, none of it surprised Pironi. He knew positions would harden and, he says, he knew the drivers would hold firm. As it has been said that Didier did not report accurately the 'agreement' reached with FISA, what did he actually say to Lauda on the telephone that morning when Niki led the drivers back? "I said I had had sufficient guarantees that the text of the licences would be changed." And he trusted in that? "I had nine agreements in front of witnesses. But I would not have put my hand in the fire to guarantee that each man there would keep his word. But they had no real choice; they knew we were united and would stand firlm."

Was he surprised then that the drivers' licences were suspended at the conclusion of the race? "Not at all. Time was on their side, Bernie and Max and Balestre were all fulminating, I expected our licences to go. But Balestre wanted us all to sign a paper saying we had violated the sporting code. There was a fairly vigorous ten minute discussion about that, and he did not prevail. First, we hadn't violated the sporting code; second, if we signed, we'd have been finished at the Appeal. I asked Balestre whether, if we signed, he would give us back our licences definitively. He said, I'll give them back. There is a difference."

On January 28th, FISA's Executive Committee sat and imposed fairly heavy fines on all the striking drivers. "They took that decision without consulting us and without hearing us, and that was later declared illegal. But I have no doubts about it now, we won. The text is to be changed and what we asked for, we got." But not with absolute certainty, and that lack of trust is probably why the PRDA was formed. "The constructors are more experienced and better organised than we are; they can split the drivers; they can lean on drivers; the power is theirs. But in many other sports it was also this way, and the athletes — those whose sport it is — banded together and altered the balance of power. That is our aim. If others sports can have, as for instance baseball does, a commission with one-third players, one-third owners and one-third managers, why can't we? Alright, I agree that this may be Utopian thinking, but though it will be a long struggle, I am certain the drivers will ultimately prevail, because the public comes out to see *us*.

"Our trouble is that the drivers are not well-informed. They are not going to act together coherently unless their interest is aroused by special issues. Kyalami was a testing-ground. The issue existed and we fought together. I myself signed waivers for ten years without thinking; we have all done so. Those days are gone forever." Indeed they are. It is not the age of Aquarius we face, but the age of the lawyer. Jan Paulsson, who now represents the PRDA, is a lawyer for the times: expert in international lax, and a connoisseur of that notorious jungle known as American sporting law. And if the drivers take to the American example, can McCormack be far behind?

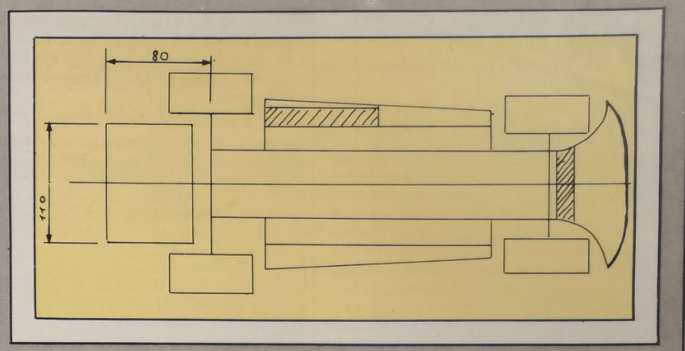
EXTRA, EXTRA

THE WING THAT GOT FERRARI BANNED

Halfway through Saturday morning's qualifying session at Long Beach, Didier Pironi appeared ont the track with a most unusual looking rear wing on his Ferrari. Just over 24 hours later, Ken Tyrrell successfully protested an identical wing on the Ferrari which Gilles Villeneuve had hauled into third place in the race. The decision of the stewards is now subject to appeal, but for the time being, Gilles is not entitled to his four world championship points.

It seems that the Ferrari wing contravenes the spirit of the F1 rules in much the same way as most of the English teams have done with their "disposable ballast" water bottles. It is quite clear in the rules that the maximum permitted width for rear wings is 110 cms, and although all the teams have used two-and three-part rear wings at one time or another, the parts have all been considered to be components of one wing.

What Ferrari has done is to interpret the rules in order to get a much wider rear wing which offers high downforce in return for low drag. In much the same way as Lotus tried to get their type 88 car accepted as having two separate



chassis, Ferrari argues thath the new wing is in fact two different structures, both of which conform with the dimensions laid down in the FIA Yearbook.

Most of the British teams were astonished that Ferrari, who has always prided himself on being a strict observer of the rules, should have been so controversial. If the wing works, and is accepted, then everyone will be able to build something similar. But many teams and drivers were concerned about the safety aspect, for virtually the entire 110 cms of each wing is completely unsupported. There were no breakages at Long Beach, but the contentious wing (which was fitted to both Ferraris in the race) vibrated noticeably, and there were reports after practice that one of them had shown signs of fatigue.

Ken Tyrrell's protest was the second against Ferrari in two GPs to succeed (he had complained at Rio about an illegal refuelling by Ferrari). *"Basically we wanted to find out if it was legal,"* said Ken. *"We need an exact wording in the regulations which isn't there at present.*

"I hope the point is now clarified and that I have saved my team the expense of having to build a complete range of new rear wings (for Imola). It's an expense which I cold do without at the moment. These rear wings cost around £1,000 (about $2,000) each, you know."

MICHELE SHINES FOR TYRRELL

Less than one year after he made his F1 debut with Ken Tyrrell's team, Milanese driver Michele Alboreto has established himself as a man to watch. Earlier this year, at Kyalami, the thoughtful 25-year-old drew attention to himself by glueing himself for many laps to Alain Prost's winning Renault after he had been lapped. At Rio he scored his first point of the year. And at Long Beach, he finished fifth, still on the same lap as Niki Lauda's McLaren.

"It was an excellent performance", said a very satisfied Ken Tyrrell. *"Michele was 37 seconds ahead of Patrese when he started to experience very serious porpoising, which has happened before when the underbody wing sections have come loose."* Despite losing his place to Patrese, Alboreto put up a very spirited defence.

Earlier in the race he had even felt sufficiently confident to try to take third place from the Ferrari of Gilles Villeneuve. In one memorable incident on the slippery new section, while fighting to save his fourth place, the plain blue

Tyrrell executed a perfect 360 degree spin and carried on without stopping, only losing a couple of seconds.

"Last year Michele's main problem was that he felt intimidated by the big star drivers and might lose as much as four seconds when he was being lapped", says Ken. *"When Eddie (Cheever) left us at the end of the year, though, Michele took on the job of testing the car. This made him realise that he was in charge. And I think his confidence has greatly increased as a result."*

The shortage of cash at Tyrrell prevents the team from going testing and from taking advantage of the latest carbon fibre technology to save weight on the Maurice Phillippe-designed 011.

Yet Alboreto plans to stay where he is for the time being. *"Obviously lots of richer teams have shown interest in him"*, says his boss, *"but he will stay with us for two years. He knows he has a lot to learn in Formula 1 ... and he believes that he can learn just as much with our little team as with anyone else."*

PRACTICE

THERE was a **Penthouse** magazine sponsored competition for the journalists at Long Beach to forecast who would take pole position. After Friday's shattering performance, when he had been the most impressive qualifier, all the betting seemed to be on **Keke Rosberg.** The turbocars were struggling through the tight new turns on the revised circuit, and those Michelin runners who had tried the French company's qualifying tyres were finding it difficult to get up any quick laps.

But on his first timed lap in Saturday afternoon's qualifying session, the flying Finn hit trouble. Clutch failure in his "race" car relegated him to the spare Williams. It wasn't set up right, and alone among the front-runners, Keke wasn't able to improve on his Friday time.

So the gamblers switched bets. It didn't

take long for them to settle on **Niki Lauda** and his McLaren MP4. The previous day he had been quick on race tyres, not the "qualifies", to the amazement even of the Michelin engineers. As one of them said, *"Niki is truly remarkable: he analyses the car's reactions so incredibly quickly. It looks as though our qualifying tyres, which were quick at Dijon, don't work well here for some reason. But it was Niki who first discovered the problem. All our other users have him to thank for finding this out."*

Remarkable is hardly the word for **Lauda.** In only his third "comeback" GP, he set off on his first laps of Saturday's official qualifying on race rubber. Six laps later, with fastest time to his credit and half an hour of the session left to run, he was out of the car and concentrating on being a spectator in the McLaren pit. He didn't even use his second permitted set of qualifying tyres, and the all-powerful Renaults -- now getting to grips with the "new" Long Beach -- were struggling in vain to match his times. At the end of the session, the chequered flag was waved to halt the high speed battle. Niki grinned at team boss Ron Dennis and turned towards the garage area for the team debrief. Twenty cars, maybe more, whizzed past the line to take the flag. The very last of them was a red and white

Marlboro Alfa Romeo, and as the Longines-Olivetti timing system video screens flashed up a final lap time, a new name appeared at the head of the list, above Niki's. It was **Andrea de Cesaris,** a veteran of many incidents and this was only his 19th Grand Prix.

In the Alfa pit, stop watches confirmed that the time was no fluke. Mechanics hugged each other. Andrea's brother Emilio Burst into tears, and suddenly the emotion of the occasion took on a new intensity as photographers and journalists heard the news from the loudspeakers and descended on the Alfa pit.

When Andrea drew to a halt, he found a couple of hundred friends waiting for him that he probably never knew he had. Even Autodelta chief Carlo Chiti stumbled forward to greet him. Still in the car, Andrea pulled off his helmet, then his balaclava. Underneath the sweat and the blinking eyes he, too, was in tears...

Yes, he said in response to questions, it was a one-off lap. He had kissed a wall on his first run, and he had to change a tyre. For a moment, or longer, this looked like being his downfall, because it appears that the marshals had not properly marked the replacement tyre. But suggestions that Andrea had practiced with an unmarked "quallie" were quickly dispelled when the marshal confirmed that he hadn't marked the tyre properly.

For Alfa engineer Gerard Ducarouge, this moment was also a triumph. After all, he has something in common with Andrea: last year they were both dismissed by their teams with something of a bad reputation. Ducarouge had built a fine car, good enough to outqualify his old Ligiers. And Andrea, incredibly, had snatched pole position from Niki Lauda, the man who had taken his place at McLaren.

For **Keke Rosberg** there was little consolation. *"I think I could have given them both a good fight for pole position if it hadn't been for the bloody clutch. But I'm very pleased that we spent this morning trying*

the car on full tanks and getting it balanced for the race. The main problem for me will be fighting through the traffic and having to find a way past the turbos."

In the Press Room, meanwhile, one happy Italian journalist was busy anticipating his **Penthouse** competition winnings. He alone had picked Andrea de Cesaris to take pole position... and he had even gauged his average speed correctly, to within a fraction of a k.p.h. ...

MGD

THE RACE

It was a race for 25 laps, and for the remaining 50 it was a battle for survival around a treacherous track that left no room for mistakes. Only 11 cars survived the mechanical carnage.

The first third of the 75 lap race provided some great racing, but with less than half distance gone, the 26-car field had been decimated to just 12 cars. It was no longer a race. More a test of survival. The task: to stay on the racing line away from the rubber-strewn edges with their treacherous coating of fine pieces of asphalt that had already claimed half a dozen of the world's most expensive automobiles and sent them slamming into the waiting cement walls. Even World Champions were not immune: Nelson Piquet and Mario Andretti had the same frustrating walk back to the Ocean Boulevard pits as the would-be champions Alain Prost or Didier Pironi, this race doing nothing for their 1982 chances either.

As if the deteriorating track surface was not enough of a hazard, there was the fearless man in the rescue truck pulling the stricken cars away, but creating another problem for the drivers to contend with, including race leader Niki Lauda, who narrowly missed a collision.

It was one of the more tense moments in the Austrian's race which was a superb demonstration of the cool analytical mind that has brought him 17 GP wins and two World Championships in the past.

From the front row of the grid, he found himself in third place into the first turn with Rene Arnoux's turbo Renault-Elf sitting just ahead of the nose of his McLaren.

It was just what he didn't want, for with the Renault slowing him around the corners and outpacing him on the straights, poleman Andrea de Cesaris was now running free out front and getting further away with every lap. Behind him, Bruno Giacomelli's second Alfa was also being troublesome but it turned out to be the lucky break he needed. After 5 laps Giacomelli made a suicide run into the hairpin. Lauda let him land the Alfa, blue smoke pouring from locked wheels, pounded into the back of the Renault, taking them both out of the race.

With nothing but an empty track between himself and de Cesaris the hunt was not a long one. Ten laps later, helped by slower traffic which the Alfa was already lapping, Lauda was ready to pounce. It was easier than he thought, for de Cesaris's Italian temperament got the better of him. He was so busy shaking his fist at Raul Boesel's lingering March as they exiled the chicane, he forgot to change gear and Lauda cruised by on the straight as the Alfa hit the rev-limiter.

He was home free now, for the only other driver likely to catch him was Keke Rosberg, but his eighth place grid position ensured that Lauda was long gone by the time Rosberg had found his way by pironi, Prost, Watson, and, above all, Villeneuve.

The Canadian put up his usual tough fight. Twice Rosberg made it ahead only to have the powerful Ferrari turbo drag past him again down the straight. This was racing at its best, but bit ended all too soon when Villeneuve tried again, got the Williams outside under braking at the end of the straight, but Gilles still would not concede, even though the corner was Keke's. *"He just kept on coming. There was no way. As I turned into the corner, I saw him going straight on, half sideways, just like he did at the start last year. It was great. Afterwards we spoke and Villeneuve told me that's what we need, more racing like that."* So did the public. Once Villeneuve had been left behind, there was little more action left in this race.

Rosberg started to eat at Lauda's 45-second lead. He chewed it back to 20 seconds, *"then I began to hope that he may have a tyre problem,"* but Lauda was in control and he kept it pegged there to the last few laps.

Rosberg settled for second place. Villeneuve held on to his third place, but he had to fight hard for it when the talented Michele Alboreto, driving another very good race for the Tyrrell team, pushed him hard but problems with second gear and a perfectly executed 360 degree spin without even stopping saw him finish behind Riccardo Patrese's Brabham which he had almost caught again at the finish.

De Cesaris's day of glory came to an ignominious end when, smielling a fire at the rear end of the car, probably caused by burning plastic around the hot brakes, he searched too long in his mirrors and drove off the track at high speed, lucky to leave his badly bent car with nothing more than one shoe less as he struggled to get clear.

Ligier promise faded fast here when Jacques Laffite, struggling with a misfiring engine as he has been for the last three races, did a "Villeneuve" on Patrese and went up the escape road, stalled his engine and could not restart. Cheever was running better, but his race ended as he was heading for the points in fifth place, a gearbox oil leak causing the box to seize solid.

Lotus had a mediocre weekend, their cars never really in the running for the points until retirements left de Angelis in sixth place with Mansell in eighth. John Watson's McLaren took seventh after dropping back from an early third when he pitted for new tyres. They were OK, but a damaged skirt and a trip up the escape road made him think otherwise.

The two Marchs of Mass and Boesel came home next, Slim Borgudd's Tyrrell being the final finisher, seven laps down after a long stop to repair damage from two separate collisions which eliminated both the ATS entries. A wheel-banging session with Winkelhock on the second lap put the German out, while two laps later, Borgudd made contact with Salazar and eliminated him, bending the steering arm of the Tyrrell. Daly, Henton and Guerrero all fell victim to the slippery track, while Jarier's race ended with transmission problems on the Osella. □

1. De Cesaris leads the pack into the first corner, while Arnoux has outdragged Lauda off the line. *Photo: B. Asset.*

2. Behind the leading three, Giacomelli is next, in front of the rest of the field. *Photo: B. Asset.*

3. For once, all the cars made it through the first turn without damage. *Photo: B. Asset.*

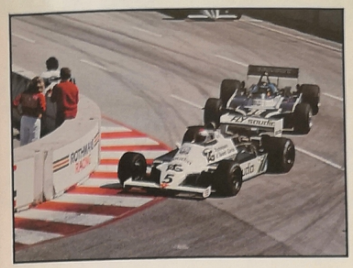
4. How many will survive the next 75 laps? *Photo: DPPI.*

5. Had Slim Borgudd some score to settle with his former employer? By lap four, he had eliminated both ATS cars! *Photo: B. Asset.*

6. Lauda is held up by Arnoux. *Photo: B. Asset.*

7. With Lauda trying to pass Arnoux, de Cesaris pulls away. *Photo: B. Asset.*

8. Once free of Arnoux and Giacomelli, Lauda quickly catches de Cesaris, and with the involuntary aid of Raul Boesel, moves into the lead. *Photo: B. Asset.*



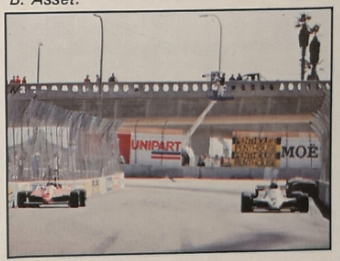
9. Mario Andretti's one-off race with the Williams team was disappointing. The former champion retired after hitting a wall. *Photo: B. Asset.*

10. Ten laps after Andretti retired, Nelson Piquet went the same way but failed to make it back to his pit. *Photo: B. Asset.*

11. John Waton was unable to resist a tipically fiery attack from Keke Rosberg, and the Finn moved up another place. *Photo: B. Asset.*

12. Gilles Villeneuve went the same way, Rosberg and the French-Canadian swopping places before the Ferrari driver spun off at this corner a lap later. *Photo: B. Asset.*

13. After Rosberg, it was the talented Alboreto who tried to relieve Villeneuve of his third place, but Gilles managed to resist. *Photo: B. Asset.*



14. Rosberg didn't settle for second place, for after passing Villeneuve, he set off to reduce the gap to Lauda, but in vain. *Photo: B. Asset.*

15. The Austrian was in full control of the race. *Photo: B. Asset.*

16. Lauda is back! He hadn't been on the top step of podium since the Italian GP of 1978. *Photo: B. Asset.*

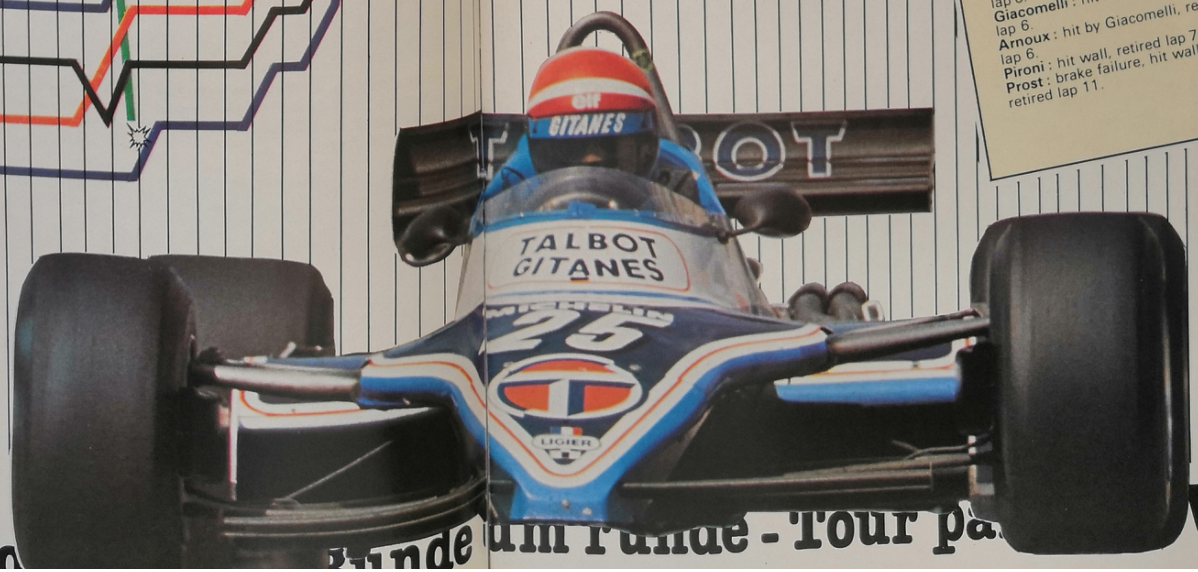
STOP PRESS
The Stewards upheld a protest by Ken Tyrrell against the Ferrari rear wings, and disqualified Villeneuve from third place. Unless Ferrari's expected appeal to the FIA is upheld, it will move Watson up to take the last race point.

Lap by lap - Giro per giro - Runde um r... - Tour par tour - Vuelta a vuelta - Ron...

22 ANDREA DE CESARIS	Alfa Romeo 182	1
8 NIKI LAUDA	McLaren MP4	2
16 RENE ARNOUX	Renault RE30B	3
15 ALAIN PROST	Renault RE30B	4
23 BRUNO GIACOMELLI	Alfa Romeo 182	5
1 NELSON PIQUET	Brabham BT49D	6
27 GILLES VILLENEUVE	Ferrari 126C2	7
6 KEKE ROSBERG	Williams FW07	8
28 DIDIER PIRONI	Ferrari 126C2	9
31 JEAN-PIERRE JARIER	Osella FA1C	10
7 JOHN WATSON	McLaren MP4	11
3 MICHELE ALBORETO	Tyrrell 011	12
25 EDDIE CHEEVER	Ligier JS17	13
5 MARIO ANDRETTI	Williams FW07	14
26 JACQUES LAFFITE	Ligier JS17	15
11 ELIO DE ANGELIS	JPS Lotus 91	16
12 NIGEL MANSELL	JPS Lotus 91	17
2 RICCARDO PATRESE	Brabham BT49D	18
14 ROBERTO GUERRERO	Ensign MN 181	19
29 BRIAN HENTON	Arrows A4	20
17 JOCHEN MASS	March 821	21
33 DEREK DALY	Theodore TY81	22
18 RAUL BOESEL	March 821	23
4 SLIM BORGUDD	Tyrrell 011	24
9 MANFRED WINKELHOCK	ATS HGS 1	25
10 ELISEO SALAZAR	ATS HGS 1	26

PIT STOPS AND RETIREMENTS

Winkelhock : collided with Borgudd, retired lap 2.
Salazar : collided with Borgudd, retired lap 4.
Borgudd : changed rear wing and tyres, repaired bent steering arm, lap 6.
Giacomelli : hit Arnoux, retired lap 6.
Arnoux : hit by Giacomelli, retired lap 6.
Pironi : hit wall, retired lap 7.
Prost : brake failure, hit wall, retired lap 11.
Andretti : hit wall lap 18, pit stop for repairs, retired lap 20.
Daly : hit wall, retired lap 23.
Piquet : hit wall, retired lap 26.
Jarier : transmission failure, retired lap 27.
Laffite : escape road, stalled engine, retired lap 27.
Watson : changed tyres, lap 29.
Guerrero : hit wall, retired lap 28.
Henton : hit wall, retired lap 33.
De Cesaris : hit wall, retired lap 34.
Cheever : changed tyres lap 27, oil leak and gearbox seizure, retired lap 60.



...ronde - Lap by lap - Giro... ...Runde um r... - Tour pa... ...Vuelta a vue...

Long Beach statistics

U.S. GRAND PRIX WEST

Date : 4 April, 1982
Circuit length : 2.13 miles
Race distance : 75.5 laps, 160.91 miles
Weather : sunny, warm
Attendance : 82 000

PREVIOUS WINNERS

1976 : REGAZZONI (Ferrari)
1977 : ANDRETTI (Lotus)
1978 : REUTEMANN (Ferrari)
1979 : VILLENEUVE (Ferrari)
1980 : PIQUET (Brabham)
1981 : JONES (Williams)

F1 CONSTRUCTOR'S CUP

1. Williams 20pts - **2.** Renault 17pts - **3.** McLaren 16pts - **4.** Brabham 12pts - **5.** Ferrari 4pts - **6.** Tyrrell 3pts - **7.** Lotus 3pts.

CHAMPIONSHIP STANDINGS

Position/Driver	S. Africa	Brazil	U.S. West	Total
1. Rosberg	2	6	6	14
2. Prost	9	4	—	13
3. Lauda	3	—	9	12
4. Piquet	—	9	—	9
5. Reutemann	6	—	—	6
6. Arnoux	4	—	—	4
Watson	1	3	—	4
Villeneuve	—	—	4	4
9. Patrese	—	—	3	3
Alboreto	—	1	2	3
10. Mansell	—	2	—	2
12. De Angelis	—	—	1	1

STARTING GRID

LAUDA
McLaren MP4
1'27"436
PROST
Renault RE 30B
1'27"979
PIQUET
Brabham BT 49D
1'26"276
ROSBERG
Williams FW 07D
1'28"576
JARIER
Osella FA 1C
1'28"788
ALBORETO
Tyrrell 011
1'29"027
ANDRETTI
Williams FW 07D
1'29"468
DE ANGELIS
Lotus 91
1'29"694
PATRESE
Brabham BT 49D
1'29"948
HENTON
Arrows A4
1'30"474
DALY
Theodore TY 81
1'30"919
BORGUDD
Tyrrell 011
1'31"033
SALAZAR
ATS HGS D06
1'31"825
DE CESARIS
Alfa Romeo 182
1'27"316
ARNOUX
Renault RE 30B
1'27"763
GIACOMELLI
Alfa Romeo 182
1'28"087
VILLENEUVE
Ferrari 126 C2
1'28"476
PIRONI
Ferrari 126 C2
1'28"680
WATSON
McLaren MP4
1'28"885
CHEEVER
Ligier JS17
1'29"336
LAFFITE
Ligier JS17
1'29"587
MANSELL
Lotus 91
1'29"758
GUERRERO
Ensign MN 181
1'30"186
MASS
March 821
1'30"476
BOESEL
March 821
1'30"977
WINKELHOCK
ATS HGS D06
1'31"593

Did not qualify :

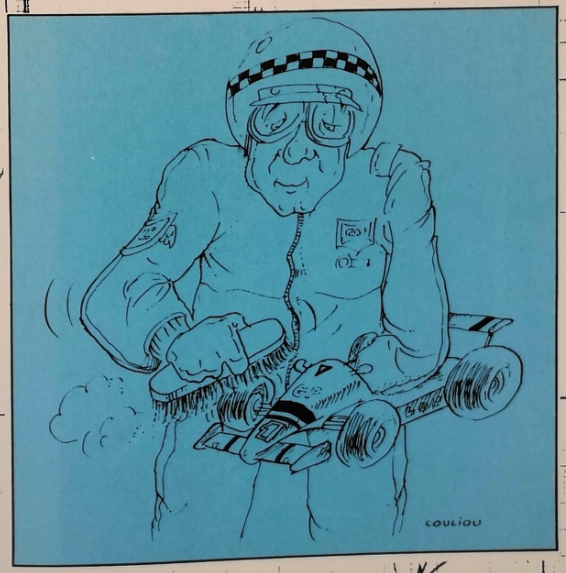
FABI (Toleman TG 181) 1'31"988
PALLETI (Osella FA 1C) 1'32"144
SERRA (Fittipaldi F8C) 1'32"496
BALDI (Arrows A4) 1'33"781

OFFICIAL QUALIFYING TIMES

	Friday	Saturday
DE CESARIS	1'31"895	1'27"316
LAUDA	1'28"791	1'27"436
ARNOUX	1'31"159	1'27"763
PROST	1'29"935	1'27"979
GIACOMELLI	1'30"669	1'28"087
PIQUET	1'29"934	1'28"276
VILLENEUVE	1'29"949	1'28"476
ROSBERG	1'28"576	1'29"042
PIRONI	1'30"125	1'28"680
JARIER	1'31"383	1'28"788
WATSON	1'32"988	1'28"885
ALBORETO	1'31"884	1'29"027
CHEEVER	1'31"882	1'29"336
ANDRETTI	1'31"190	1'29"468
LAFFITE	1'31"432	1'29"587
DE ANGELIS	1'30"565	1'29"694
MANSELL	1'30"117	1'29"758
PATRESE	1'30"281	1'29"948
GUERRERO	1'31"886	1'30"186
HENTON	1'32"687	1'30"474
MASS	1'31"808	1'30"476
DALY	1'32"582	1'30"919
BOESEL	1'32"277	1'30"977
BORGUDD	1'31"768	1'31"033
WINKELHOCK	1'31"593	1'31"602
SALAZAR	1'33"663	1'31"825

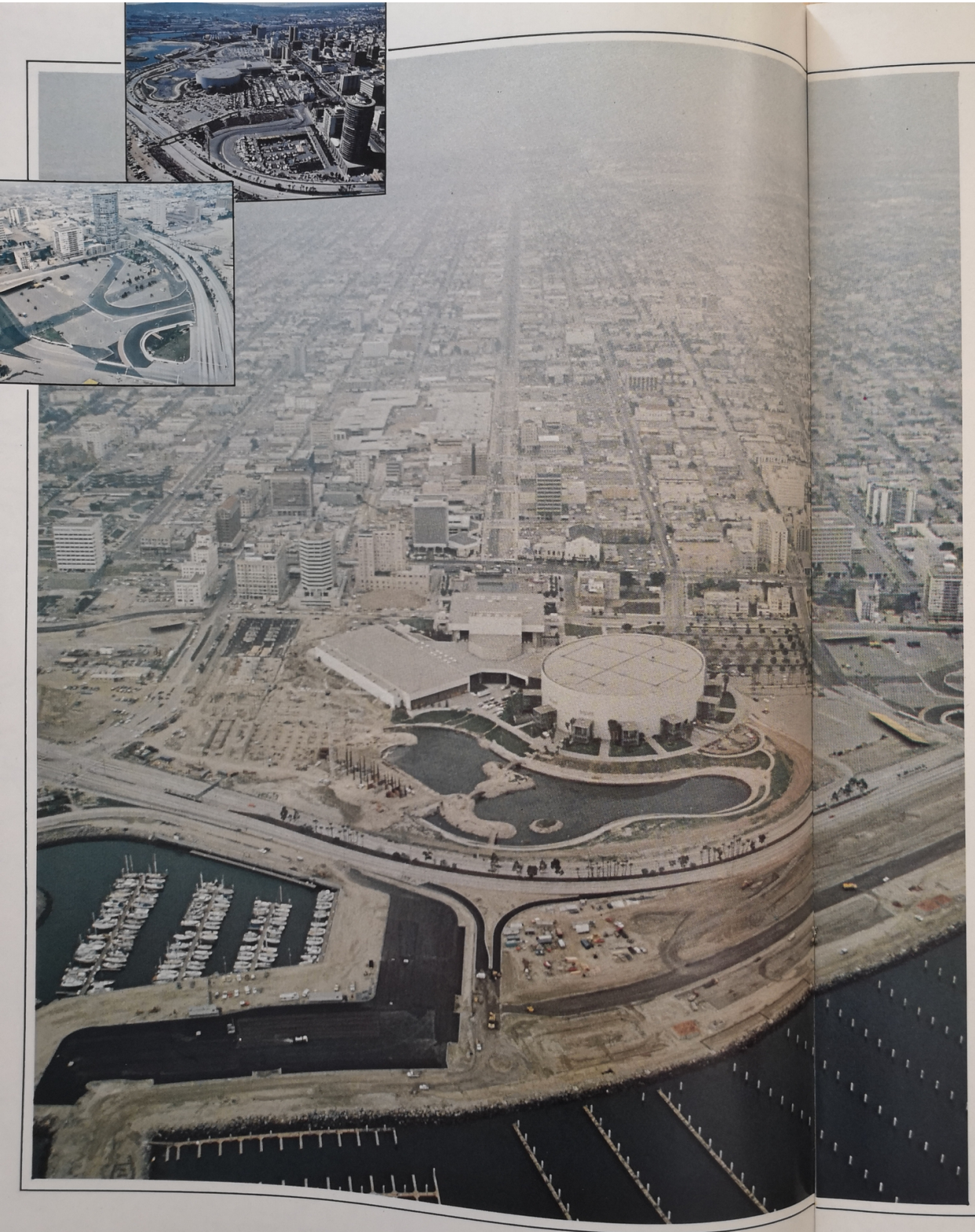
RESULT

1.	LAUDA	McLaren MP4	75.5 laps in 1 hr 58'25"318
2.	ROSBERG	Williams FW 07D	14"660 behind
3.	VILLENEUVE	Ferrari 126 C2	1'04"288 behind
4.	PATRESE	Brabham BT 49D	1'18"143 behind
5.	ALBORETO	Tyrrell 011	1'20"947 behind
6.	DE ANGELIS	Lotus 91	1 lap behind
7.	WATSON	McLaren MP4	1 lap behind
8.	MANSELL	Lotus 91	2 laps behind
9.	MASS	March 821	2 laps behind
10.	BOESEL	March 821	5 laps behind
11.	BORGUDD	Tyrrell 011	7 laps behind



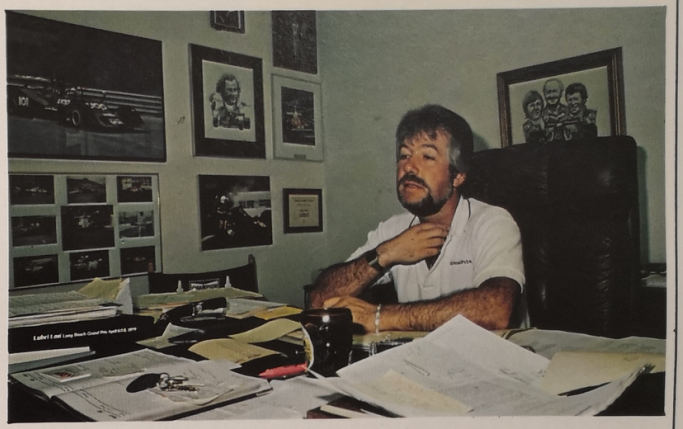
THEIR FASTEST RACE LAPS

	Time	Lap n°
Lauda	1'30"831	12
Rosberg	1'32"586	51
Villeneuve	1'32"907	11
Patrese	1'32"598	12
Alboreto	1'32"914	22
De Angelis	1'32"936	12
Watson	1'31"261	6
Mansell	1'33"273	59
Mass	1'34"312	13
Boesel	1'36"819	4
Borgudd	1'33"413	68
Cheever	1'33"125	11
De Cesaris	1'31"285	11
Henton	1'35"413	15
Guerrero	1'34"893	13
Laffite	1'32"487	12
Jarier	1'33"852	9
Piquet	1'32"934	14
Daly	1'35"893	10
Andretti	1'32"579	17
Prost	1'33"052	3
Pironi	1'34"168	3
Arnoux	1'32"028	3
Giacomelli	1'31"602	4
Salazar	1'37"844	3
Winkelhock	2'40"769	1



Circuit in a city and inset above, the old track, below, with 1982 changes.

INSIDE THE LONG BEACH GRAND PRIX



LBGP originator Chris Pook at the heart of the operations.

We, the public, only consider a Grand Prix for three days each year. To Chris Pook and his team at the Long Beach Grand Prix Association, it is very much a full time job. The brainchild of Pook, it has now grown into one of the established favorites of the Grand Prix circuit, but as he expains, it has been a tough fight to keep his race in the race...

By Jeff Hutchinson

If the Grand Prix organizers had their own Bernie Ecclestone, he would surely be Chris Pook, President of the Long Beach Grand Prix Association.

Born in Somerset, England, in 1942, Pook, a stocky man with a close-cut beard, is the sort of person that makes things happen, not always an easy task in a place like southern California.

He arrived in the United States in 1963 and almost 20 years later, little remains of the boy who left those sleepy Somerset countryside surroundings. His big frame is lost in a huge high-sided leather chair, stretching forward every few minutes to answer one of a bank of telephones that seem to be permanently summoning his attention. He speaks with a thick Californian accent that betrays only a slight trace of his English origins.

After starting a career in an investment bank in London, he took an interest in motor sport at 17, competing in Formula Junior and rallying events around Europe in the days *''when you could race and live on very little money and have a great time doing it.''*

He was 21 when he packed his bags and left Europe with the intention of finding

his fortune in Australia, via the United States.

"I arrived in New York and stopped for 4 days, then went on to Chicago" which he liked even less, staying just 3 1/2 hours. He moved on to California where a friend fixed him up with a job as a building worker, earning $2.60 an hour. The Californian sunshine, and the job opportunities America presented, soon replaced ideas of Australia and he has stayed there ever since.

Within a year he had married a Californian girl and formed his own travel company called Hollywood Tours, geared to selling to Europeans and South Americans the dreamland they were used to seeing in the cinema. By 1973 he had a thriving business, but the idea of running that business for another 10 years had turned sour.

He was looking for a new challenge, and came up with the idea of a Grand Prix race around the streets of his home town of Long Beach.

The idea was easy. Turning that dream into reality was more than enough of the challenge he was seeking. Long Beach is a fast-growing city and in 1973 the climate was right for such a project, as the city was looking for ways to improve its image and become an international tourist attraction.

"I had surrounded myself with people from the Convention Center Bureau and put the idea to them. They thought it was just crazy enough to be a success."

With their backing, he went to the City Fathers and started winning support. "Then I got Dan Gurney involved -- I had met him a couple of times during my racing in Europe. He helped design the first ideas for a track and I got in touch with Les Richter of the SCCA, and when I thought we had a suitable circuit, we put it to the City."

At first the idea was turned down. But with the help of Tom Binford of ACCUS, Jean-Pierre Beltoise and Ing. Giuseppe Bacciagaluppi of Monza, a suitable circuit was designed and approved by the City.

"With their approval, we were able to go ahead and get a date for the first race, scheduled to take place in September, 1975".

By this time, early 1975, Pook had already put up considerable amounts of his own money for the project, and it was time to start finding the big money needed before the dream could go any further. *"That turned out to be the easiest part of all, after we got the go-ahead from the City, compared to what we ran up against with a body of well-meaning people called the California Coastal Commission. They were supposed to be responsible for the ecological preservation of the coast to within 1,000 yards of the shoreline,"* explains Pook.

"We had to prove to them that the noise from the racing cars would not offend the fish in the sea or the ears of the seagullus, or in any way impact on the coastline."

"It was a long and tedious task. In order to convince them that we would not pollute the coastline, we had to appeal against their objections as high as State level."

It took Chris a long time to overcome that, but when he did, he could safely start raising the estimated 1 million dollars it was going to take to stage the first race.

"With the aid of two very good stockbrokers and founder members of the LBGPA, we began selling stock in the Corporation at a minimum of $5,000 per block. By Californian law, every stockholder had to earn over $35,000 per year, be a resident of California and have an affiliation with automobiles, even if it only meant owning his own car."

Elaine Bond and her husband, founders of Road and Track magazine, were two of the few racing-associated people to get involved in the project at the time. Many of the other racing-oriented people of the area were still smarting at their involvement with the Ontario Motor Speedway which had been a financial white elephant.

"We had to raise at least $650,000 capital before the Corporations' Commission would release the money to let us start building the circuit. That was the figure that they reckoned we would need to cover our costs with ticket sales guaranteeing the rest."

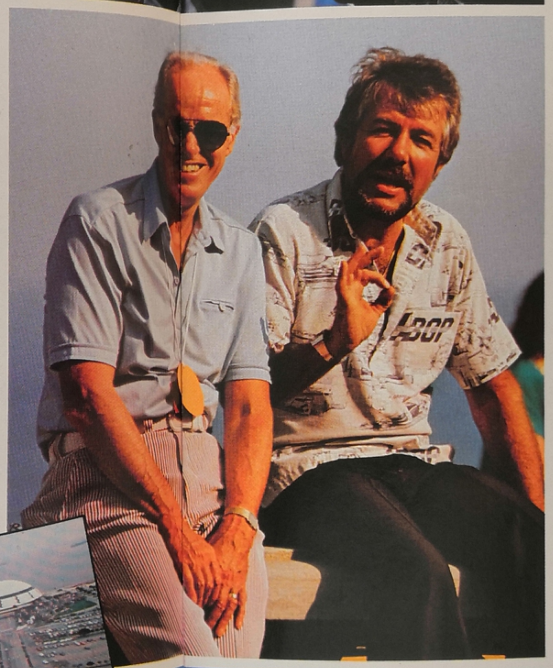
It took the now growing and enthusiastic team of helpers just four weeks to raise the capital and with seven weeks to go before the first race, they were allowed to draw on that sum. Things like the safety fencing and concrete blocks to line the track were already under construction, financed by personal guarantees from the various stockholders.

Also on the team by this time was racing enthusiast and skilled accountant Jim Michaelian, who had left his secure job as chief accountant for Borg Warner to join people like Pook on this wild venture, which seemed to have a dozen more obstacles to overcome each time one was surmounted. The physical problem of building the track in seven weeks without totally disrupting the town was solved by Dr. Peter Talbot, who helped design the circuit's saftey system and made the first serious use of rubber tyre barriers, now adopted on many other tracks around the world.

Since that first race, the task of coordinating the track construction has been carried out by Lance Shafer. He has got the task of building a Grand Prix track out of wire, rubber and concrete down to a very fine art. This year, he also had to cope with practically a third of the track having been redesigned.

"Those early days saw us all working 20 hours a day to get the first race, for Formula 5000 cars, on the road," recalls Pook. *"Only a few hours late on Friday afternoon, September 26, 1975, the 'impossible' happened and we had Formula 5000 cars with names like Brian Redman, Jody Scheckter, Tony Brise, Jackie Oliver, Bobby Unser, etc, racing through the streets of downtown Long Beach. It was a moment I had waited a long time for."*

They are both hard-driving and they understand each other well, Bernie Ecclestone and Pook.



Two city-circuit men: Robert McCabe of Detroit and Pook.

Other attractions: Queen Mary, and hanger of Howard Hughes' aircraft, the Spruce Goose.

"We had learned so much and had so much more to learn," Pook says about that first race, which almost began in disaster when one of the first competitors out onto the track got "lost" and drove head-on into the back of the concrete walls. The car caught fire and the driver was seriously injured, but happily there were no other incidents throughout the weekend to detract from the brilliance of their effort.

But just a couple of days before the race, the whole thing had been jeopardized for the umpteenth time when one of the residents around the track, who objected to the upheaval, decided to file a restraining order on the grounds that his wife was fenced in and unable to go to church on Sunday morning. Of course, the case was dismissed, but it was another headache that Pook and his crew did not need.

"Crowd control was so bad that we had ticket receipts for 37,000 paid spectators, yet every one of the 62,000 grandstand seats was taken. That was another lesson we learned the hard way, but despite the problems it was a great event. Brise was incredible until he broke a drive shaft, while both Scheckter and Oliver crashed, leaving Brian Redman to win."

"There were some funny incidents, too," says Pook, *"although they did not seem so funny at the time, like the start of the second heat when I got a call from race control to say that there was somebody wandering around on the track. We looked out of the window and there, below our office, was a drunken bum crawling out from behind the tyre barriers, having slept there throughout the entire first heat, just a couple of feet from the cars."*

At the end of the day there was another panic when Pook realised there was no champagne to give the winner at the end of the race. *"I rushed into a liquor store across the street only to find that his shelves were almost bare. I told him what I needed and he produced a warm bottle of sparkling wine from the back of the shop and told me it would be $12, but I only had 8 or 10 on me. When I told him it was for the winner he gave me the bottle and said, 'Oh, in that case, take it for free. I've made so much money this weekend I owe it to you.' "* Pook only just made it back to the podium in time.

A few months later the whole operation was back in action for the first Grand Prix race in 1976, but with almost $500,000 loss on the first race, it was a financial nightmare trying to get money mobilized for the Grand Prix.

"We had already gotten all the credit we could and nearly all our suppliers wanted payment up front. I spent half my time running down the road to the advance ticket sales office, taking out all the cash they had, then running to deposit it in the bank so I could write out checks to the list of the most urgent suppliers waiting in my office," explained Michaelian.

Things ran more smoothly for the Grand Prix. *"I don't think we could have ever had the GP without the F 5000 race first,"* says Pook, but the Grand Prix still lost a similar amount of money and the financial crunch came shortly after the second race. *"We had to pay off 130 major creditors,"* explained Michaelian.

"It took almost a month as Chris and I invited each of them into the office and explained to each of them that if they agreed to take 35 cents in the dollar in cash and another 20 cents in stock, we could give them that and the promise that we would use them for future races. We told them the alternative would be to go bankrupt and they would end up with a lot less. It was a brilliant move, for in California law it would only have taken any three of them to get their heads together and bring a collective action and we would have been forced to close up. Fortunately only one objected and we paid him off, and we're still in business."

Michaelian still shakes his head in disbelief at those incredible days of financial acrobatics. *"Things began to turn around the following year when we broke about even, and since then we have made a fair profit which has helped towards paying off our debts. But it has been a long, hard road."*

Today the Long Beach GP team runs a slick operation which also includes the marketing of motor racing and sponsorship throughout the Unites States through an offshoot company called Sports Consultants International, headed by Brian Turner, another of the original members of the group. Pook has also sold the team's expertise as a complete race organization package, and they organized the recent Caesars Palace GP, which for a first-time event ran surprisingly smoothly.

He is branching out into promoting nationwide TV coverage of the Grand Prix held in the United States, while he recently became co-publisher of **Grand Prix International**, which he is marketing in America.

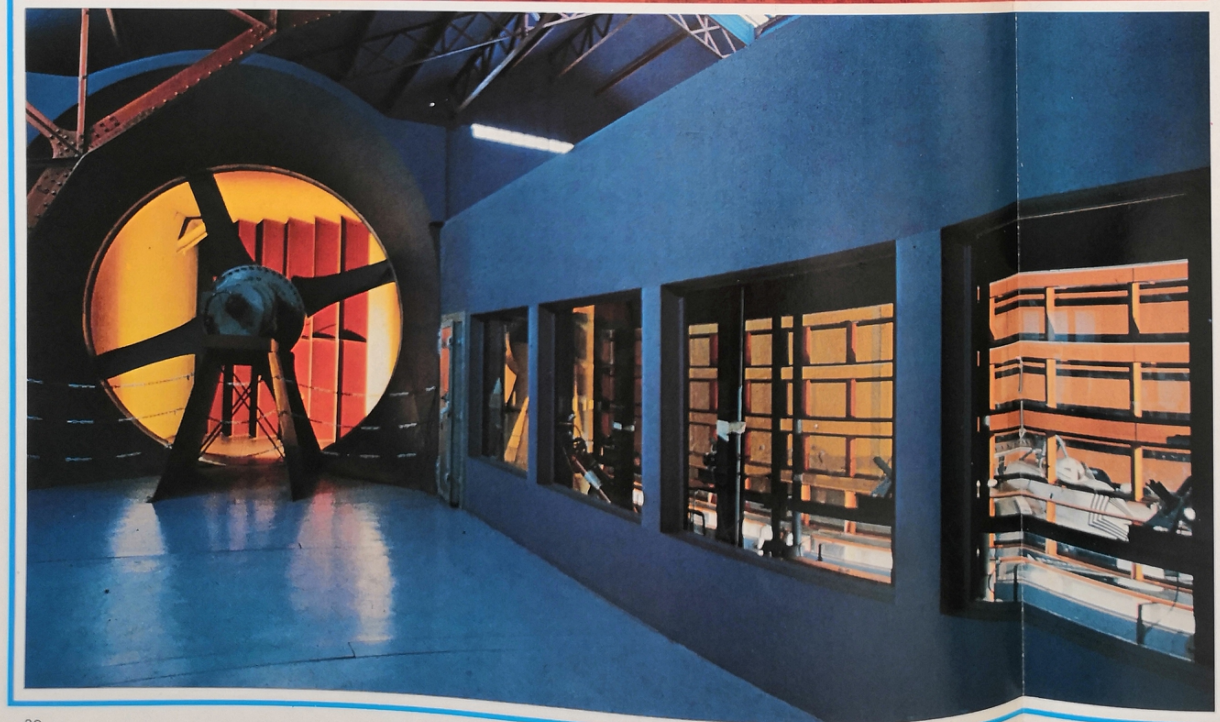
"I would also like to see more races at the track as well as the GP. There is a possibility of a sports car race next year," says Pook, who is gaining experience in that branch of the sport by promoting a round of the World Endurance Championship at Watkins Glen in upstate New York Aug. 1.

He is busy 12 months of the year now, establishing the LBGP Association as a diversified, profitable company. *"It makes me very nervous indeed when I hear about drivers' strikes a few weeks before my race. If the GP were to be cancelled, it would be a struggle to save what we have built up here. That's one of the reasons I am trying to branch out. I owe it to the stockholders above all."*

That is the reason he has a sign above his bathroom mirror, to remind him each morning that "This is a business, not the sport you love".

But if it had not been for the love of the sport, there would not have been a Toyota Grand Prix in the streets of Long Beach this year or any other year, the accomplishment of a determined man with a dedicated team. □

1/1 scale Renault in the big tunnel at St. Cyr.



The same tunnel. It has huge propellors at oth ends to smooth air flow.

WIND TUNNELS:

Art meets technology at St. Cyr. An array of fans.

KEY TO PROGRESS

Within a few years, aerodynamics has become the key to success in Fl.
It is not long since the main concern of engineers when drawing a new car was cleaning up the suspension, but aerodynamics are now the determining factor. So Grand Prix teams spend an important part of their research budget on wind tunnel work. To get an idea of what this involved, we visited the St. Cyr Institute, near Paris, which is frequently used by Renault, Talbot-Ligier and Alfa Romeo.

by Giorgio PIOLA

FROM the outside, the austere building gives no indication that it houses one of the world's most sophisticated aerodynamic installations. Once inside, the visitor is plunged into a world of fascinating technology. The St. Cyr Institute has five wind-tunnels of varying sizes, giving air speeds from 80 to 144 kph (49 to 89 mph). The Lockheed wind tunnel in the United States can measure the aerodynamic pressures on a vehicles running at a relative 300 kph (186 mph). Using a wind tunnel is not cheap, 15,000 francs (about £ 1,360, $ 2,500) per day for the full-scale tunnel at St. Cyr, but with a computer system enabling the engineers to take results every five minutes, about 40 tests can be made in a full working day, giving time to modify the car between tests.

The accuracy of the results is impressive. The six fundamental components of the effect of the air on the car are separated: the drag (Cx), the downforce (Cz), the transversal force and the three moments (the division of forces between front and rear, right and left, and the lateral forces when a car slides).

The introduction of ground-effect cars, whose underside is designed to create downforce, made wind tunnel studies a fundamental need. In the 1970s, engineers wor -

ked empirically, on a basis of elementary data not far removed from simple common sense and their experience. A team which did not test its cars in a wind tunnel today would gravely effect its chances of success. Michel Tetu, the technical director of the Renault team, explained to us the process of building an F1 car from the model stage, and it was evident that empiricism is not longer in fashion:

"When the engineers draw an F1 car, they start from the aerodynamic concept in outlining the car and including its various components. A model from this drawing is tested in a wind tunnel and undergoes various modifications. The team then builds a first, static, fullscale model of sheet metal and wood. If its results in the wind tunnel are satisfactory, the shape is then fixed. The next stage is making the master, the moulds for the bodywork, and the mechanical parts. The bodywork and the mechanically changed pieces are tested with a device which records aerodynamic effects electronically, these results being cross-checked with the wind tunnel figures.

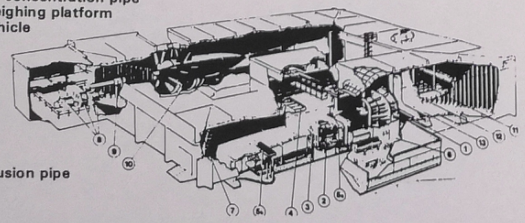
"As long as differences remain between the track and the wind tunnel figures, the car can be perfected aerodynamically. Of course, there can never be perfect correlation because the wind tunnel can only give an approximative simulation, although it is very accurate, of the problems resulting from the deplacement of the car through the air. Furthermore, a configuration which is irreproachable from the aerodynamic point of view may compromise the cooling systems, so we have to find a compromise in the wind tunnel, rather than an abstract truth. The major difficulty we meet in the wind tunnel is the reproduction of the flux of air passing under the car, whose role has increased with the appearance of wing-cars. The wind tunnel produces a sort of perverse effect which we call 'a limiting layer'. It is a layer of air between 6 and 9 centimeters (3.7 and 5.6 inches) high which stays almost motionless under the car in the tunnel, but which does not exist when the car is really moving through the air on the track. So we have to use tricks to get rid of that layer, such as blowing or sucking it away, using a rolling road under the car, or employing a system allowing the wheels to rotate while isolating the air-flow around the tyres.

"Another problem is that the figures recorded in the tunnel, such as Cx and Cz, do not vary proportionally with the speed. Reynolds' research, which also concerned the friction and the viscosity of the air, showed this problem that we noticed when we carried out full scale tests in the Lockheed tunnel at Atlanta, Georgia, at 300 kph (186 mph). We discovered that even taking the Reynolds number into account, our extrapolations of the results from a 150 kph (93 mph) airflow were slightly wrong.

"Within these limitations, wind tunnel study allows us to judge the effect of modifications or even simple changes of settings such as wing angles. We have two engineers on wind tunnel work full time, but it is essential that the aerodynamicists remain in close contact with the track staff so as to stay within practical limits. We have been working at St. Cyr with models 10 days ever y two months, and with a full scale model two days every month. That shows how much importance we attach to aerodynamics --and I am convinced that there are still big surprises in store for us."

CUTAWAY OF THE GIANT FIAT WINDTUNNEL, WHICH HAS A 9 METER (27 FOOT) DIAMETER FAN.

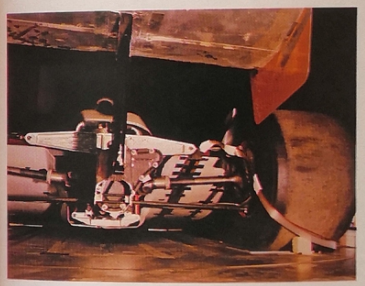
1. Air concentration pipe
2. Weighing platform
3. Vehicle



4. Diffusion pipe
5. System to reduce the limiting layer with a) suction grill and b) grill for reentry into the layer
6. Control room
7. Air suction tube with winglets
8. Motor
9. Fan shaft
10. Fan
11. Heat exchanger
12. Turbulence diffusion grill

The control room. A computer gives results every 20 seconds.

1/4 scale model with one pontoon open, one closed for flow comparisons. Wheels are spun to simulate track air flow.



The 1/1 model on the sensitive, rotating weight platform.

HOW DOES A WIND TUNNEL WORK?

BASICALLY, a wind tunnel is an instrument created to simulate the behavior of a vehicle moving through the air, with the vehicle stationary and the air driven by a propellor.

While fullscale tunnels give better approximation of reality, smaller tunnels for models are generally used for practical reasons in preliminary research, although all mechanical details cannot be reproduced. However, the model form can be quickly modified with clay or cardboard.

Wind tunnels must give a uniform airflow, so the transition from slow to high velocities must be as quick as possible. To achieve this, the air duct is funnel-shaped ahead of the propellor with a reverse funnel at the far end which slows the air as it goes around again.

The tunnel itself generally has a rotating platform, on a weighing machine, on which the vehicle stands.

The tunnels themselves vary. British installations have almost continuous lateral wall panels which get progressively larger nearing the end of the main chamber, giving a higher wind speed, as at Atlanta, than other designs. While it helps studies of longitudinal air flow, it confuses measurements on transverse flow as the air is constrained unnaturally by the walls.

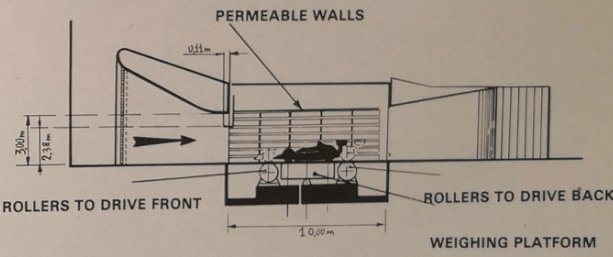
The system mainly used in France is of an effectively "open" chamber with no walls in the measurement zone. The St. Cyr tunnel, however, is of a third kind with walls of grill-work through which the air can diffuse.

Other major differences in tunnel design concern the vehicle platform, rolling roads, and the way of dealing with the static layer of air under the vehicle.

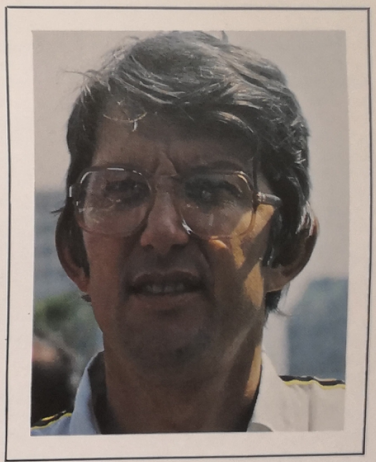
The weighing platform permits measurement of pressure on the car when the air-stream hits at an angle instead of head-on, the rolling road simulates the vehicle's motion and partly reduces the static air layer, which can be removed further by aspiration or ventilation. At Fiat's Orbassano tunnel, the layer has been reduced to 2.4 cms.

But wind tunnels can give curious results. Thus, the Cx of a Formula 1 car is 0.8, compared with 0.7 for a truck and 0.3 for a good series-production car. The Cx of a vehicle is a function of its form and section, and the wind tunnel figures show the dramatic turbulence created by the huge tyres used in Grand Prix racing.

POSITION OF VEHICLES IN A WINDTUNNEL CHAMBER



FACE TO FACE: PETER WARR



Although there are now many team managers and technicians whose faces are better known to the public, Peter Warr is one of the racing personalities whose views are often sought by the press. He served at Team Lotus from 1969 to 1976 as Colin Chapman's right hand man before leaving to join the new Wolf team which was later merged with the racing interests of Emerson Fittipaldi. Lucid and knowledgeable as well as highly experienced, Warr's abilities were too valuable to waste, and he's now rejoined Lotus as part of Colin Chapman's bid to win races after a three-year vacuum.

By Mike Doodson

Before we turn to your own place at Team Lotus, can you explain to us the rôle which Colin Chapman plays in the team as far as planning and design are concerned?

His rôle at Team Lotus has not changed significantly in all the years that I've been involved. He's still the source of all ideas and policies, even down to some of the operational details. What has changed is that as some of his other rôles have become more onerous he has had less and less time to devote to directing the fortunes of the team. But there isn't a great deal which is not originated on the cars, or changed, without him being positively involved. He doesn't spend a great deal of time anymore standing at drawing boards with a pencil in his hand, but he does see them when they've been translated into metal. And often he'll ask for changes to be made.

He is also very much involved, at the races, with the running of a car (this year it's Nigel Mansell's), so there is a direct link between the ideas from the drawing office and the way they work at the race track.

You yourself are back with Lotus after five years. What was your previous involvement with the team?

I started with Lotus in 1958, as assistant to the Sales Manager, and over the next year and a half I was directed to Lotus Components, the company which made customer racing cars. I was myself a cus-

Warr works closely with de Angelis in Brazil.

tomer, because I was racing Lotus cars in Formula Junior events at home and abroad. I held that position until 1966, when I took over the running of the company. I left when the company was moved from North London to Norfolk later that year but returned in 1969, when Colin offered me the job of running Team Lotus. That was the position that I had always wanted in the company: I did it from 1969 until 1976, when I left to join the reorganised Walter Wolf racing team. I re-joined Lotus in December 1981 with the title of "Director and General Manager".

What is the chain of command on the design side?

Peter Wright, who is a co-director, is in charge of Research & Development, so he's mainly involved in long-term projects of pure research. Once they are formalised -- say in the form of a new car -- they are handed over to Martin Ogilvie, our Chief Designer, who has a team of draughtsmen working under him. They are responsible for producing the detailed design of the car. We also have a team of race engineers who are responsible for maintaining, in the workshop, the standards that have been set by the drawing office. They also go to the races and look after the operational engineering of those cars.

Lotus has already had a reputation as a team which introduces exciting engineering innovations. But you seem to have been less successful than some other teams in carrying through the innovations to a successful long-term conclusion. Is this a fair assessment?

Yes, by and large I think the way you've expressed it is correct as far as the impression we have is concerned. I'm not entirely sure, however, that it's true in theory! One of the motivations that drives Colin Chapman, and Team Lotus, has been to be a pace-setter. He still wants to have that reputation, so we try to set the trend. Also, if you're to be competitive in this business, there's some merit in trying to do things that other people haven't done, rather than trying to do things which other people have done already (and trying to do them better). That's been the rôle of Lotus and Colin Chapman, so I'm not sure that we have failed to follow things through. It may be that we've abandoned a pretty damn good idea, or race-winning layout, sooner than we should have done. But on the whole I think that the cars and projects which have been abandoned (by Lotus) have been left behind because of the law of diminishing returns: they were not worth the money that it would have been necessary to invest. Instead, we prefer to make a quantum leap forward.

That, of course, in exactly what Lotus did by getting involved in the twin-chassis Lotus 88 project which was the subject of so much controversy last year. What effect did the abandonment of that project have on Lotus?

Now that I'm back with the team, it's very clear that Lotus results suffered last year because the team had to swap backwards and forwards between two different cars. The performance certainly suffered as a result of the preoccupation of Colin and Peter Wright with the legalities and the politics of the 88. They should have been able to devote themselves instead to the performance of the race cars, and to making them do better than other teams. For the future, while we still want to win the case for the 88 in principle, we feel that we already have won in effect following the decision handed down at an RAC Tribunal by Lord Shawcross, who is one of the country's leading legal authorities. Meanwhile, we are following a slightly more traditional approach with our new car, the type 91, which is our car for the 1982 season.

There are already links between Lotus and Toyota on a road car project. What chance is there of this association extending to racing? Could there

be a Toyota turbo in Team Lotus' future?

Well, I've heard the rumours too! That's as far as it goes...

Eight or nine years ago you stated that the only reason why drivers left Lotus was because they weren't good enough. Is that still true today?

Yes. In any leading racing team, if you've got a driver who's doing the job for you, the only possible reason for him to leave is because you're not doing the job for him and you're not able to deliver the goods for him, or vice versa. Circumstances have, of course, changed since I made that statement, because there are other market forces at play now. If a team trains a young driver and stays with him for a few seasons, there is always a risk that he might be tempted away by a lot more money than, say, we are able to pay him to stay. At Lotus we will continue to follow the policy of hiring the best drivers, regardless of nationality, history or whatever. It is, however, very nice to be able to encourage promising young drivers of your own, and we are doing that by signing youngsters like Roberto Moreno and Dave Scott to testing contracts.

Elio de Angelis was rumoured not to be happy about staying with Lotus for 1982 because he wanted to go to Alfa Romeo. Is the relationship with him now settled?

As far as I'm aware yes, it is, although that unsettled period mostly took place prior to my rejoining the team. I think we now have a good, settled relationship with both our drivers.

When you left Lotus in 1976, it was a "major" team. But circumstances have changed to such an extent now that Lotus probably qualifies as a "minor" constructor. What are the chances of Lotus going into the turbo era, perhaps still with the Ford-Cosworth engine, and being able to use your superior technology to win?

I think Lotus is prepared to go into any "era" and to race against other constructors on their terms, provided that we have the right amount of advance notice to which we feel entitled. We also need to have the right to make our own decisions about the way we want to handle things.

You've mentioned our reputation for tackling things from an unconventional or pioneering standpoint: we want to retain the freedom to do this. It may be that we don't see turbo engines as being the way to go: on the other hand, all we're asking for is a stable set of regulations for long enough to enable us to formulate our own policies and plans. There doesn't seem to be anything at Team Lotus to prevent us from doing what we have always done, which has been to put together good sponsorship and a suitable financial package to enable us to explore the technology and techniques for building faster and better racing cars.

In this respect, then, are you satisfied with the terms of the Concorde Agreement?

Yes, inasmuch as it was the best arrangement that could be reached at the time. One year later it's easy for us to see areas where it could be tidied up or refined. When it was drawn up, we entered into the spirit of the agreement, so we're saddened to see, since then, that one or two developments have taken place which were not in the spirit of the agreement, and not in accordance with the legal terms in which it was drawn up. I'm referring mainly to the change of regulations as far as skirts are concerned for this year. And last minute changes like that don't give any teams, including Lotus, the opportunity to plan their finances, their research and development or their testing programme with enough notice in advance.

With your experience in racing, can you think of any permanent solution to the constant political struggles which are presently threatening the future of Formula 1?

Not an immediate solution... but I think that, as in divorces, some of the things that have been said by the parties involved are the sort of things which cannot be un-said. Therefore, perhaps the solution is to change some of the people, so that we could start with a clean sheet of paper. That might help to avoid the inevitability of personality clashes every time a meeting was convened or discussions started on a new subject. It would, however, be impolite and impolitic for me to suggest which people should be changed. There are, however, a few (people) who don't have the financial involvement that the teams, or the sponsors, have. Perhaps they have too much power, or their attitudes are too entrenched to leave any room for manœuvre. And if you'll switch off your tape recorder I'll be glad to give you some names... □

THE 91 SCORES AGAIN

Nigel Mansell in Brazil, Elio de Angelis in California: both times Colin Chapman's drivers have succeeded in scoring points in tough and selective Grands Prix.
Photo : B. Asset.

NO FLUKE

Michele Alboreto proved that his sixth place in Brazil wasn't simply lucky by moving up a place to fifth at Long Beach. The Tyrrell driver qualified well and scored more points for Big Ken. Photos : B. Asset.

MARCH ON

The two Rothmans Marchs were again finishers, to make it five finishes from six starts this year. Jochen Mass (above) was ninth, despite a lost gear level knob, and Raul Boesel (below) tenth. Photos: Eric V.

THAT'S RACING

Anyone who thinks the cars corner on rails, and that spectacle has gone, wasn't watching Eliseo Salazar (above) or champion Nelson Piquet (below) round the turns of the streets of Long Beach. Photos: P. Behar/Vandystadt Agency.

SOFTLY, SOFTLY

A Long Beach without a first corner accident is without precedent, but this year, all the cars made it without incident. The odd puff of smoke from a locked brake reflects the drivers' care, as do Watson, Laffite and Patrese.

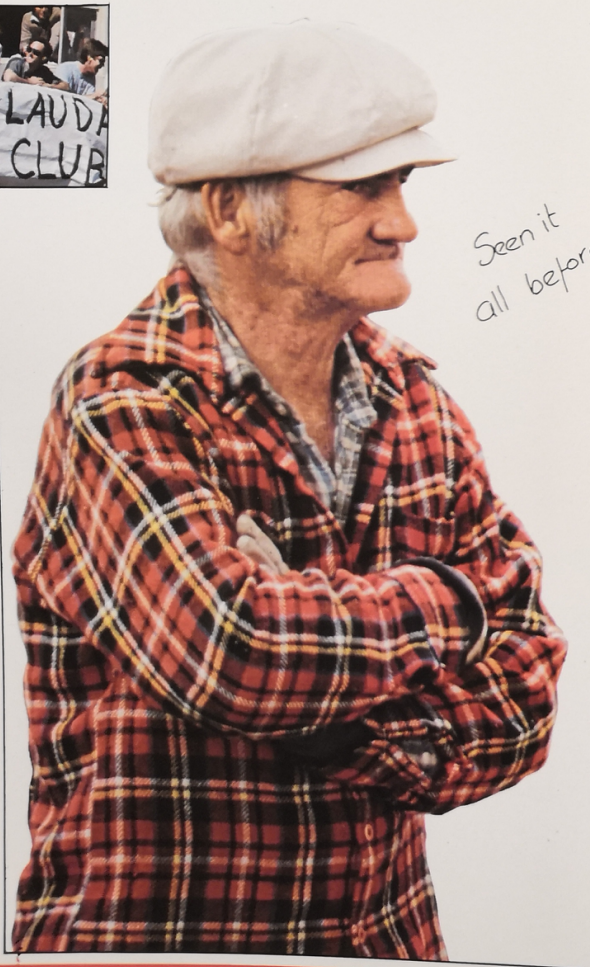
ANDREA'S PLUS POINT

Andrea de Cesaris attracted a lot of unfavourable comment during the past season, following 20 accidents in McLarens. The Long Beach GP saw another damaged chassis added to the score, but this time, he had started from pole and led the race. And Andrea is still the youngest driver in the pack...

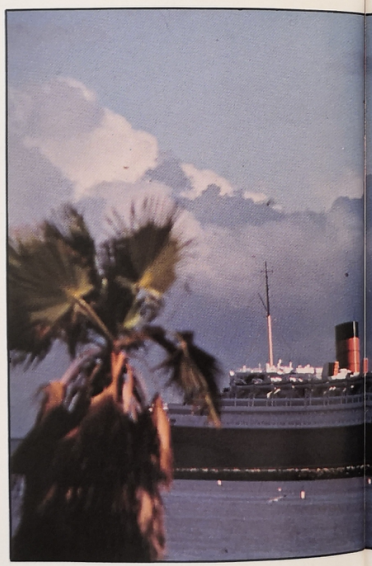
Postcard from Long Beach

Bikers do it in the streets, too!

Skateboarding is OUT

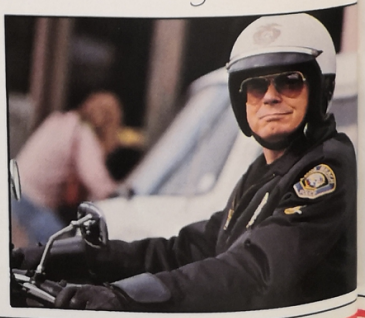


Seen it all before



Drivers have all the luck

Speeding?



FRANK WILLIAMS inside ??

love G.P.I

NELSON'S COLUMN

Two years ago, Long Beach provided me with my very first GP victory. This year I managed to do only 26 laps before I went off the road and into one of those hard concrete walls. I can tell you that I didn't feel at all happy as I watched one of the wrecker trucks trying to pull my damaged Brabham BT 49 to safety.

I wouldn't like the Long Beach accident to be marked down as being my fault. I had been having trouble with wy brakes almost since the beginning of the race, with the pedal going spongey at unpredictable moments. Long Beach is certainly not the sort of circuit where you can afford to do without your brakes, and the thought of having the pedal go all the way to the floor when you're trying to slow down from 200 kph (120 mph) makes me sweat even now.

We have been experimenting with carbon fibre brakes on our Brabhams for more than a year now, and we had decided to race them at Long Beach. They ran perfectly well all through practice, both with full and empty tanks. I had a minor bump in the final session of timed practice, but that was my fault and nothing to do with the brakes at all.

So what was different about the race? Well, as I quickly discovered, the brakes got very hot indeed when I was running in traffic. Evidently, the lack of cool air to the front brakes when there's another car just in front is enough to make the differences, because I could see the front brake discs glowing red hot under heavy braking at several points around the circuit. The heat was boiling the brake fluid in the calipers, which causes the pedal to go spongey.

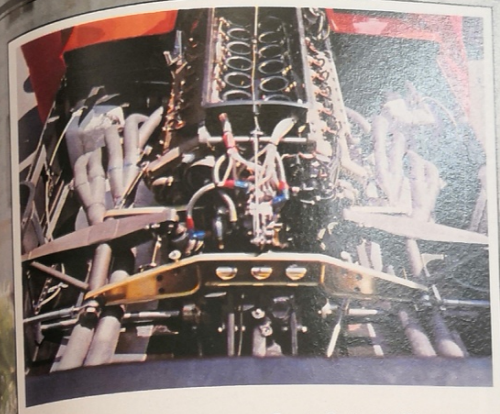
Obviously we've got some more work to do on the carbon brakes before we can use them again. No doubt one of the things which Gordon Murray will have to consider is using water cooling: at the moment we're only ducting water to the rear brakes...

I suppose I should really blame Gilles Villeneuve for my problem, because it was his Ferrari that I was following when I crashed, and it was he who was blocking my supply of fresh air. I was getting a bit tired of watching that illegal new Ferrari rear wing jiggling around just a few metres in front of me. And although neither Gilles nor I had the most suitable rubber for the circuit, I felt that my car was quick enough in the corners to have passed him. Because of my brakes, though, I was not on the limit. Unfortunately, overtaking was very difficult at Long Beach this year because the asphalt all around the new section of the circuit was breaking up very badly. It seems that I wasn't the only driver to walk back to the pits after an accident on Sunday.

Two drivers who impressed me in the race were Keke Rosberg and Michele Alboreto. Keke had the same tyres as I did, and I think he must have worked very hard to finish second behind Niki, who is obviously already driving as well, or maybe a little bit better, than he did when we were teammates in 1979. Alboreto was right behind me when I had my accident, and he would probably have found a way past me if I hadn't gone off the road. It was a fine achievement for him to go the distance without making a serious mistake.

On the day after the race in California, I was expected in Detroit to do some publicity for the organisers of the race there. I shall also be taking a look at the work they're doing on the circuit, and I may have a few words of advice for the Detroit people about tow trucks and fresh asphalt.

It looks as though we shall be doing some testing both at Richard and Zolder before the San Marino GP in two weeks' time. I discussed the tests only briefly with Gordon Murray before he left to go back to England after the race in Long Beach. To be quite honest with you, at this moment I have no idea whether we will be racing the BMW turbocar at Imola or whether we'll be sticking with the latest version of the Cosworth chassis. I leave decisions like that to the management and I think that we're both happy with the arrangement. □



ALFA ROMEO
182/1 : Bruno Giacomelli
182/2 : Andrea de Cesaris
182/3 : T-car

The combination of the powerful and torquey Alfa Romeo V-12 engine, Michelin rubber and some more miles on the new 182 chassis proved to be excellent for the tight turns of the streets of Long Beach. Revised baffling in the oil tanks solved an oil surge problem from Brazil and Andrea de Cesaris surprised everyone with a last-minute lap to take pole position, despite clipping a wall at the start of final practice. Bruno Giacomelli took fifth place on the grid, putting the pretty new Alfas right back with the leaders in only their second race.

ARROWS
A4/1 : Brian Henton
A4/2 : Mauro Baldi
A4/3 : T-car

Despite finding the front end of his car very unstable, Henton did a good job of setting 20th quickest time just as a cracked exhaust pipe prevented him trying for a faster time in the final session. His team-mate Baldi crashed his race car on Saturday morning and was unable to get the spare car into a qualifying time for the race during the final period. Both cars were fitted with a revised rear wing for this race.

ATS
HGS 1/03 : Manfred Winkelhock
HGS 1/02 : Eliseo Salazar
HGS 1/01 : T-car

After impressive showings in South Africa and Brazil, the same ATS cars were struggling here, just scraping on to the back row of the 26-car grid. Salazar's first day was spoiled by clutch and engine problems and on Saturday he could not get his car to handle properly, complaining of bad turn-in on the corners.

Winkelhock was looking an encouraging 17th at the end of the first practice, but slipped back after crashing his race car on Saturday morning and not improving his time with the team's spare chassis in the afternoon.

BRABHAM
BT49D/16 : Nelson Piquet
BT49D/17 : Riccardo Patrese
BT49C/15 : T-car

The weekend did not start off well for the Brabham team when Patrese knocked off a right front wheel against the cement wall in the opening laps of the first untimed practice. The car was too badly damaged to repair, so he was forced to use the older BT49C spare chassis for the rest of the weekend.

After setting eighth best on Friday, *"something was wrong with the chassis causing the car to suddenly oversteer very badly"*, said Patrese, who lost a furthen 10 places on the grid despite improving his times.

Piquet crashed his car in the final session when he got off line over the tricky down-hill, left-hander after the pits and hit the tyre barriers. He tore off the right front wheel, which fortunately for the Brabham team was repairable for the race despite a nasty gash in the monocoque. The cars features new side-pod profiles for this track, which was also proving tough on their carbon-fiber brakes.

Cockpits

ENSIGN
MN181/1 : Roberto Guerrero

A 10-dollar fiber-glass kit and the handywork of Ensign designer Nigel Bennett and helper Chuck Jones, revised skirts and a new rear wing put the low-budget Ensign team's new car into a creditable 19th place on the grid after not qualifying in Brazil. *"If I had known how to use qualifying tyres better I might have been even quicker, because I set my best time on an already used set of tyres"*, explained Guerrero.

SEFAC FERRARI
126 C2/057 : Gilles Villeneuve
126 C2/056 : Didier Pironi
126 C2/058 : T-car

"The engine is good, but not good enough to make up for the extra weight and slow cornering speeds", said Gilles Villeneuve, who did his best to make up for that. Despite a couple of spins he stayed off the walls and took seventh place on the grid. Pironi set ninth quickest time complaining of traffic and that his Goodyear tyres were not even good for one fast lap before they started to go off.

A new spare car had revised intercoolers and different sidepod profiles, while all three cars had a new split front wing instead of a one-piece wing for this race. Ferrari also caused a stir on Saturday morning when they fitted a new rear wing to Pironi's car consisting of two wings, one mounted slightly ahead of the other with the center sections overlapping, as an ingenious way around the wing width regulations. Both cars were fitted with the wing for the final session, Pironi saying that it helped slightly in top speed and around the slower corners.

FITTIPALDI
F8D/05 : Chico Serra
F8D/03 : T-car

Besides suffering from a bout of 'flu throughout practice, Chico Serra was even sicker on Saturday night when he failed to qualify. Despite feeling bad on Saturday morning he had little trouble setting a time that would have almost got him into the race. But in the official session his car was handling worse than ever on qualifying tyres and he could not get within two seconds of his unofficial time or better his fastest from Friday.

McLAREN INTERNATIONAL
MP4/4 : Niki Lauda
MP4/5 : John Watson
MP4/2 : T-car

Michelin tyres and Niki Lauda proved a strong combination for the McLaren team in Long Beach, Niki holding pole position and not even bothering with his second set of tyres, only to be caught out in the final moments by de Cesaris pole-winning time, pushing the Austrian to the opposite side of the front row. Lauda proved the strength of the McLaren foot box when he hit the wall head-on the first day without serious damage to the car or any harm to himself. John Watson was never happy with the handling of his car throughout the weekend and ended up 11th, 1.4 secs. slower than Lauda's best.

ROTHMANS MARCH
821/08 : Jochen Mass
821/09 : Raul Boesel
821/07 : T-car

Unchanged since Brazil, the two smartly turned-out Rothmans cars took 21st and 23rd places on the grid after a relatively trouble-free practice. Boesel spun during the first untimed practice on Friday, damaging a rear wing.

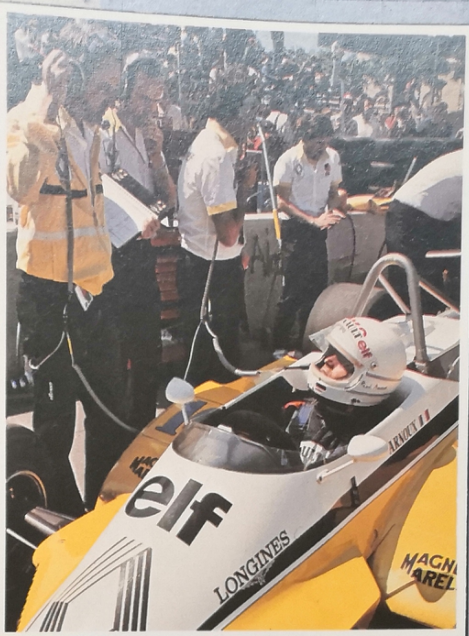
Revised lighter cars for Imola should see the March team move further up the grid in the coming weeks.

OSELLA
FA1C/3 : Jean-Pierre Jarier
FA1C/2 : Riccardo Paletti
FA1C/1 : T-car

Jean-Pierre Jarier showed that the Pirelli tyres cannot be as bad as some teams would have us believe, when he set a strong tenth place on the grid before he was forced into the pits with a broken rear suspension.
New springs and an improved skirt system improved the Italian chassis considerably, although his young team-mate Paletti failed to make the grid with his best time more than four seconds slower.

THEODORE
TY02 : Derek Daly

A problem with the rear uprights which saw two breakages over the weekend left the Theodore team short of replacements by the end of practice, and left with no choice but to try to repair what they had. Despite this, Daly managed to get the car working well enough for 22nd place on the grid.



RENAULT
RE30B/6 : Alain Prost
RE30B/7 : René Arnoux
RE30B/5 : T-car

A lighter sidepod material and other detail lightening work since Brazil has brought the Renault Elf cars under the weight limit for the first time with water "ballast" being added to the hollow seat. René Arnoux headed the second row of the grid despite 20 minutes in the pits during the final session to change a damaged 2nd gear, and an engine failure the previous day.
Alain Prost's misfiring problems from Brazil persisted the first day, but were finally traced overnight to some debris partially blocking the turbo intercooler, and he looked like a serious contender for pole position after Saturday morning. Unfortunately, a wrong decison concerning spring rates for the final session upset the handling and braking of his car, causing it to jump around over the bumps, and he had to be content with fourth place behind Arnoux, but with the knowledge that the car should be much better for the race.

Cockpits

TALBOT LIGIER
JS17/05: Jacques Laffite
JS17/04: Eddie Cheever
JS17/02: T-Car

The heavy Ligier chassis and its V-12 engine were much better suited to the Long Beach track than to Rio. Both cars were well in the top 10 throughout most of practice, but Laffite's final session was spoiled when an engine blew on Saturday morning and he missed half the last period while a new one was being fitted, taking a distant 15th in the final times.
Eddie Cheever brushed a wall early on in the session and spent a lot of time in the pits having his front suspension realigned, finally settling for 12th best when he got out again.

TOLEMAN
TG181/07:
Derek Warwick
TG181/06: Teo Fabi
TG181/05: T-Car

It was another disappointing weekend for the Toleman team. Derek Warwick found himself eliminated from practice when his car suffered a misfire in the first practice session. Teo Fabi made it through to qualifying, but narrowly missed getting into the race when he was held up by a slower car on his quick lap on qualifying tyres. Since the last race, the engine pontoons have been double-skinned for increased rigidity.

TYRRELL
011/4: Michele Alboreto
011/5: Slim Borgudd
011/2: T-Car

Michele Alboreto continued to show impressive form in the Tyrrell, which was unchanged from the last race. A brush with the wall during the first session Friday bent the front suspension, but he made up for it with a fine drive for 12th on the grid.
Slim Borgudd *"felt more confident than I have done all season,"* so was disappointed by lack of grip in the final qualifying hour, only getting 24th of the 26 places.

JPS LOTUS
91/7: Nigel Mansell
91/6: Elio de Angelis
87/3: T-Car

Despite a nasty testing accident at Willow Springs a few days before the race, Nigel Mansell was in good form at Long Beach, taking 17th on the grid when the final practice was delayed by gearbox trouble. The team was trying long and short wheelbase set-ups in order to improve handling here, eventually going with the short.
De Angelis took 16th place, both cars progressivly harder to handle as more rubber was laid down during practice.

WILLIAMS
FW07D/15 : Keke Rosbert
FW07D/16 : Mario Andretti
FW07D/14 : T-car

Three days testing in Dijon between races made Keke Rosbert a lot happier with the set-up of his Williams than he had been in Brazil. He was quickest at the end of the first day and was confident that he could hold pole position the second day, but right at the start of the session a broken clutch forced him to use the unsorted T-car. He saw all his efforts of practice slip away to eighth place on the grid, the only driver but one not to go faster in the quicker track conditions Saturday.
Mario Andretti was finding his work cut out to handle the Williams around a track like Long Beach for the first time, taking 14th place on the grid.

The cars were running new rear wings for this circuit as well as their original twin-capiler brakes which added more than six kilos to their weight, but were necessary for the heavy braking here.

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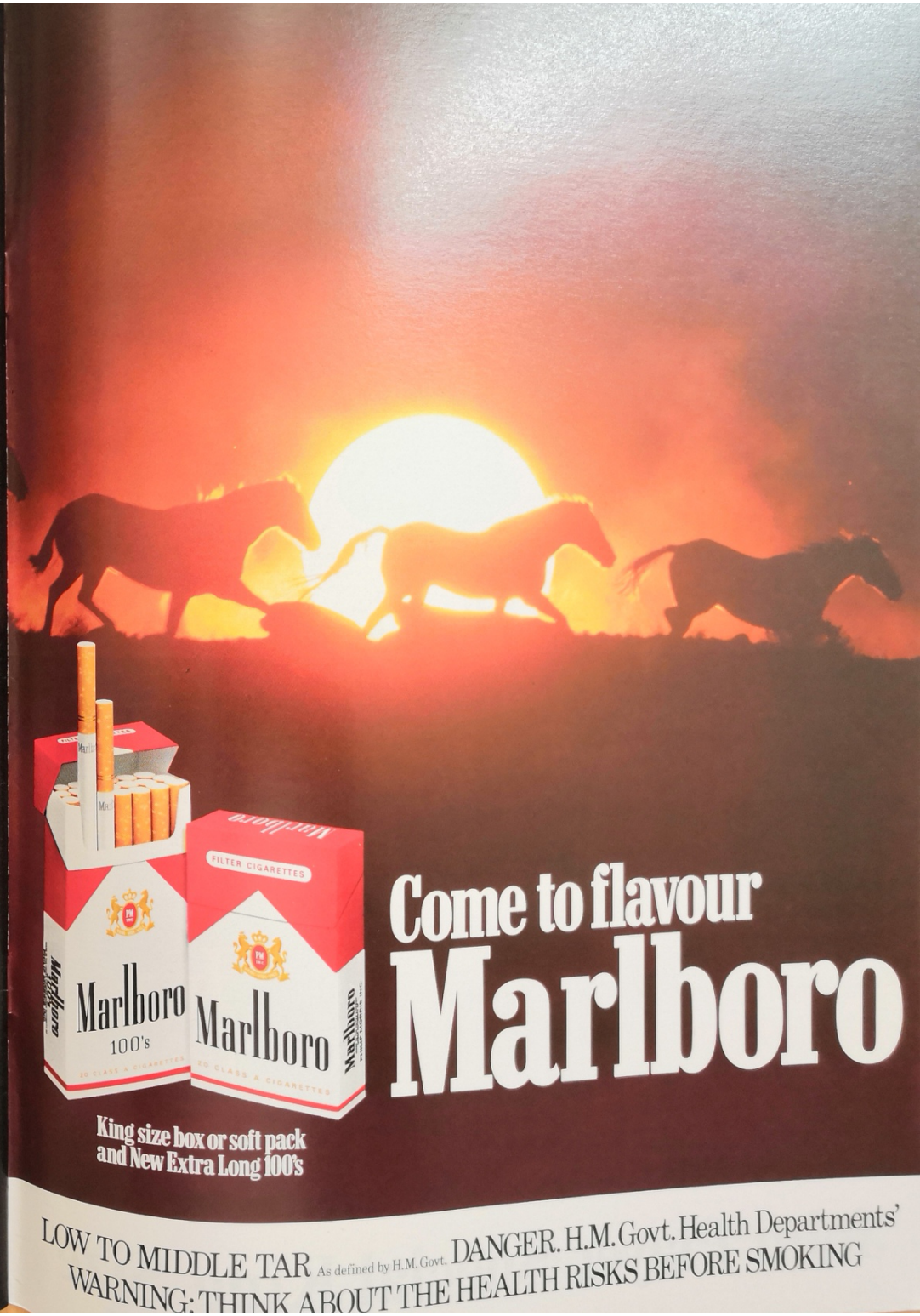

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